

Agricultural Land Use on Cape Cod:

Looking to the Future



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APCC Farm Inventory Executive Summary

Like many areas across the country, Cape Cod has lost thousands of acres of farmland over the past half-century or more, mostly to residential development. This conversion of agricultural lands to subdivisions has led to several deleterious consequences. Among these are the:

- loss of a rich cultural heritage of working landscapes, long a part of the Cape Cod allure (e.g., fields of Eastham turnips, East Falmouth strawberries);
- decline in economic diversity;
- disappearance of important meadow habitats for wildlife;
- inability to purchase locally grown foods and the human health impacts associated with the industrialization of agriculture and the long-distance transport of foods; and
- intensification of the disconnection of people from the land upon which they are utterly dependent.

APCC created this inventory of farms and farming activity on Cape Cod to draw attention to the status of agriculture on Cape Cod, to identify the impediments to farming, and to make recommendations for increasing the amount of farming on our peninsula.

In developing this inventory, APCC discovered that it is very difficult to estimate the number of farms, farmers, and acres in agriculture for a variety of reasons. Among these are differences among the federal, state and local governments in the definition of farming and methods of counting and identifying land upon which agriculture takes place. Other confounding factors are the use of multiple land use codes on one parcel, lack of a land use code identifying a farm parcel, the fact that one farmer may farm more than one parcel, the size of a parcel is not the same as the amount of acreage under cultivation or upon which livestock are reared. For these and several more reasons, the results of this inventory must be considered simply an estimate of agricultural activity on Cape Cod.

Findings

Given the above caveats, our study estimates:

There are about 4,250 acres that are categorized as farm lands on Cape Cod and an additional 600 acres where shellfish are cultivated on aquaculture grants.

There are approximately 300 farms on Cape Cod, and about 235 aquaculture license holders.

Although some farming activity occurs in each of the 15 towns on Cape Cod, 70% occurs in the towns of Barnstable, Bourne, Falmouth and Sandwich.

Eleven towns have commercial aquaculture grants; 70% of the aquaculture acreage is in the coastal waters of Wellfleet and Barnstable.

About 40% of the land-based agriculture is cranberry bogs worked by about 65 farmers. Another 35% percent is general farming activity (vegetables, livestock, pasture) undertaken by about 140 farmers. The remainder is wood lots, tree farms, garden centers and greenhouses.

Farms on Cape Cod range from a few tenths of an acre to one parcel that is more than 200 acres. The average size of a Cape farm is 14 acres. Thirty percent of the farms on Cape Cod are 1– 5 acres; 23% are 5 –10 acres and 15% are 10 – 20 acres in size. By and large the smaller farms are those in the general category. The larger farms are cranberry bogs, wood lots and tree farms.

About 23,000 acres or about 9% of Cape Cod is considered to be on Prime Agricultural soils, soils identified by the state as being ideal for agriculture activity. Eighty percent of these prime agricultural soils are located on the Upper Cape. With the exception of several thousand acres of prime soils on the Massachusetts Military Reservation, the vast majority of this land has been developed mainly as residential subdivisions.

Only about 3000 acres of undeveloped land or underdeveloped residential land on prime agriculture soils remain on Cape Cod. Most of this is in very small parcels.

Of the approximately 4,250 acres of agricultural land, about 60% is under state programs Chapter 61 and 61A, which offer financial incentives to property owners to retain their land in agriculture.

A 228-acre parcel in Sandwich is only one on Cape Cod that is under the state Agriculture Restriction Program. Yet, this parcel has not been actively farmed for about a decade.

Farming activities, including aquaculture, brought in close to \$14,000,000 in sales in 2007. The majority of that came from cranberries (40%), garden centers and greenhouses (28%) and aquaculture (25%).

There has been a dramatic increase in the number of farmers’ markets and community-supported agriculture programs on Cape Cod in recent years. There are more than a dozen farmers’ markets and 9 community-supported agriculture programs on Cape Cod.

Six towns have agriculture commissions and right to farm bylaws.

Eighty percent of the 56 farmers who responded to our survey are between the ages of 46-74. Sixteen have identified someone to take over their farm business upon retirement. Sixteen of the survey respondents indicated that they would have to sell their land.

Recommendations:

State:

The Massachusetts Agriculture Preservation Restriction program is purposefully geared to protect farms, and especially farms on prime agricultural soils, that are deemed of statewide interest. The state should instead recognize the benefit of having farming activity taking place in all regions of the Commonwealth. To that end, the state should:

- Reduce the number of acres necessary for participation in the APR program from 5 acres to 2 ½ to 3 acres.
- Create a range of prices that the state will pay per acre that reflects the different costs of land in different areas of the Commonwealth.

The minimum lot size of 5 acres for participation in the state Chapter 61 and Chapter 61A program should be changed to 2.5 to 3 acres. The amount of income that must come from farming activity should remain the same as the current regulations.

Region:

The Cape Cod Commission Regional Policy Plan (RPP) should include as a goal no net loss of farmland.

RPP Land Use goal 3.1 supports activities that “achieve greater food independence for Cape Cod.” The Commission should establish a committee to begin working with the agricultural community to determine how the Commission can best implement this goal.

RPP Land Use goal 3.2 states “development unrelated to agricultural operations shall be designed so as to avoid or minimize development on lands capable of sustained agricultural production as evidenced by soils, recent agricultural use, and/or surrounding agricultural use.” This goal should be changed by striking the words “or minimize.”

The Commission should lower thresholds that trigger regulatory review of developments that are proposed for existing farmland or for prime agricultural soils lands. The present RPP mandates Development of Regional Impact (DRI) review for clear cutting land of two acres or greater. The RPP should make any development proposal to alter existing farmland or undeveloped prime soil land of two acres or greater a mandatory DRI as well.

Land Use goal 3.2 states: “development unrelated to agricultural operations shall be designed so as to avoid or minimize development on lands capable of sustained agricultural production as evidenced by soils, recent agricultural use, and/or surrounding agricultural use.” This goal should be changed to state: “development unrelated to agricultural operations shall avoid any development on lands capable of sustained agricultural production as evidenced by soils, recent agricultural use, and/or surrounding agricultural use.”

Towns:

1. Towns should make every effort to identify and protect parcels where farming is occurring, especially larger parcels.
2. Cape Cod towns’ Local Comprehensive Plans should include a goal of no net loss of active farmland and the necessary policies to implement that goal.
3. Town should identify these areas of prime soils and other areas where agriculture is a desired land use and evaluate the use of low-density zoning as a tool to protect these lands.
4. Cluster or Open Space Residential Design Development (OSRD) bylaws should be amended to 1. make cluster or OSRD by right and a grid design available only with a special permit and 2. reduce the number of acres necessary to use cluster or OSRD. These amendments would improve opportunities for agriculture.
5. Other towns should follow Barnstable’s lead and map areas for agriculture redevelopment.
6. All towns should start an agricultural commission to promote local farming.
7. Towns should enact Right-to-Farm bylaws, a general bylaw that acknowledges that farming, and its associated sights, sounds and odors is a legal, accepted and desirable use of land that is of value for cultural and economic reasons.
8. Greater collaboration between the agricultural community and open space community) town Community Preservation Committees and land trusts) on Cape Cod could lead to more protection of farmland

General:

All efforts should be made to purchase the 228-acre parcel in the town of Sandwich, which is on prime agricultural soils, is under the state Agriculture Preservation Program, but which has not been farmed in a decade.

Massachusetts General Laws Chapter 61 and 61a provide financial incentives to farmers whose land remains in production. Farm advocacy groups, land trusts and other interested agencies should encourage farmers to remain in these programs and for other farmers to participate in these programs.

The towns and agriculture groups should evaluate municipal lands that have not been set aside for conservation and tax title lands for their potential use for agriculture.

I. Introduction

Like many areas across the country, Cape Cod has lost thousands of acres of farmland over the past half-century or more, mostly to residential development. This has resulted in the loss of a cultural heritage that was often tied to distinct locales on Cape Cod (e.g., East Falmouth strawberries, Eastham turnips). Loss of meadows and pastures associated with farms has also reduced species diversity as the number of animals and plants that favored such open habitats declined dramatically. The decline of agriculture also decreased economic diversity across the peninsula. Finally, the absence of a local agriculture base is another example of a people who have lost a sense of connection to the Earth and its land and water, upon which we are all totally dependent for our sustenance.

APCC has been concerned with the loss of local agriculture for all of the reasons cited above. We developed this inventory of farms and farming activity on Cape Cod to draw attention to the status of agriculture on Cape Cod, to identify the impediments to farming, and to make recommendations for increasing the amount of farming on our peninsula.

II. Agriculture’s Roots on Cape Cod

The native Wampanoag sustained themselves on Cape Cod for millennia planting and harvesting crops such as corn, beans and cranberries in addition to hunting, fishing and shellfishing. When Europeans arrived, the Wampanoag showed them how to make use of the many food plants indigenous to the region. European settlers saw Cape Cod as a place of agrarian opportunity and did not immediately take to marine-based activities (Wheeler and Parker, 1922). As time passed and more settlements were built, farming became highly regarded as a way to make a good living in Barnstable County. Later, the construction of major roads and eventually a railway system enabled farmers to bring goods quickly to roadside stands and to markets both on and off Cape Cod. This infrastructure, in turn, supported additional farming ventures that provided job opportunities as well as the establishment of farming groups that functioned as cooperatives during harvest seasons.

Favorable weather and soil conditions allowed farmers in Barnstable County many opportunities ranging from dairy farming to fruit and vegetable growing, making Cape Cod an agricultural “hot spot” (Wheeler and Parker,

1922). Many different kinds of crops were grown, reflecting the differences in soil composition that created exclusive growing conditions for highly sought after fruits and vegetables (Table 1). Towns and villages successfully marketed their unique and various farm products to the point of global recognition. Falmouth, for example, was known worldwide for several varieties of strawberries that thrived in the rich medium loam soils. This upper Cape Cod town had optimum soils for high yields of Echo, Howard No. 17, Abington, King Edward, and Big Joe strawberries as well as other fruits. According to the Falmouth Chamber of Commerce (2009), at the turn of the twentieth century, Falmouth was the largest producer of strawberries east of the Mississippi. Large harvests provided employment to local citizens during the growing season. Even Boston businessmen would take a week of vacation to pick strawberries on Falmouth farms for relaxation (Wheeler and Parker, 1922).

Eastham soils, on the other hand, were very sandy and drained quickly, creating an excellent growing environment for root vegetables such as the uncommonly sweet, large white Eastham turnip. Although mystery surrounds the genealogy of this heirloom root vegetable, which has been handed down from generation to generation, its ability to flourish in this outer Cape area is indisputable. Its fame created a demand for the mildly flavored vegetable with the pale purple top nationwide, and placed Eastham on the agricultural map (Whalen, 2009).



Figure 1. Overlooking the farm near Upper and Lower Shawme Ponds in Sandwich, MA. Courtesy of Sturgis Library Archives, MS.

Table 1. Historical agricultural products in the fifteen towns in Barnstable County (“The Commonwealth of Massachusetts Population Resources of Cape Cod in 1921”).

Town	Prominent Historical Agricultural Product
Barnstable	Cranberries
Brewster	Fiber, wood
Chatham	Shellfish
Dennis	Cranberries
Eastham	Asparagus, turnips, carrots, and cranberries
Falmouth	Strawberries, oysters, cranberries, and cattle
Harwich	Cranberries
Mashpee	Cranberries
Orleans	Ducks and cranberries
Provincetown	Fishing
Sandwich	Grain, dairy, and woodlands
Truro	Grain, fiber, and cattle
Wellfleet	Fisheries
Yarmouth	Cranberries and shellfish

Sediment deposits and depressions left from retreat of the Laurentide ice sheet beginning about 20,000 years ago provided the perfect habitat for wild cranberries to grow on Cape Cod. In addition to blueberries and Concord grapes, cranberries are one of only three native fruits that are commercially produced in North America (Lambert, Lass, and Rogers 2004). Cranberries need acidic peat soil, adequate sand, a fresh water supply, and a seven-month growing season with a dormant period in the winter.

Commercial cultivation of cranberries began in Barnstable County in the early 1800s and quickly proceeded to become the principal agricultural income producer (Cape Cod Cranberry Growers’ Association 2008). By the turn of the century, a “dominant cooperative,” where growers sold their harvest to one company to distribute, was started and controlled the price of cranberries. Over the next several decades, the number of acres harvested, the yield per acre, per capita total supply, and price all rose along with an increase in demand (Lambert, Lass, and Rogers 2004).



Figure 2. The harvesting of a cranberry bog at the turn of the century in Harwich Port, MA. Courtesy of Sturgis Library Archives, MS 81. Date taken unknown.

Overall, agriculture on Cape Cod began to diminish following the Civil War. Steam engines and railroads introduced western products that competed with locally produced goods. People were attracted to unfamiliar products that were advertized as having superior quality, making local farm produce seem less attractive (Wheeler and Parker, 1922).

Contributing to the decline of agriculture was soil erosion. Grains were not a prominent crop on Cape Cod, limiting the number of ruminants that could graze and fertilize these lands. Combined with wind-induced erosion, the amount of productive farmland declined further (Wheeler, 1920). As time passed, farming became a less viable line of work causing farmers to find other means of employment.

As readily accessible transportation made it easier for visitors to come to Cape Cod, the peninsula gained in popularity. The Cape’s population soared from about 30,000 in the 1930s to about 215,000 in 2010 and lands that once were devoted to agriculture were transformed into residential developments. Coupled to the expansion of the population was an expansion of the size of residential lots, with the result that much of Cape Cod today comprises residential lots that are too large to mow and too small to farm.

In 1920, the United States Department of Agriculture (USDA) began to compile farming data for every U.S. county every five years. Unfortunately the USDA used different data sources to compile the information in different years, making it difficult to compare data between years and to interpret the data in a meaningful way (Table 2).

Table 2. Acres of farmland in Barnstable County, 1920–2007 (USDA-NASS website and Amanda Pomicter from the NASS census office).

Year	Acres			
	Cropland	Pasture	Woodland	Accessory land and other
1925	8,872	7,426	15,242	4,345
1930	3,432	1,872	10,238	6,329
1935	8,701	3,100	22,495	7,706
1940	6,284	3,399	14,115	11,619
1945	8,164	2,378	9,254	4,404
1950	7,771	2,618	8,399	2,181
1954	6,938	2,280	7,367	3,832
1959	3,999	594	6,294	1,910
1964	4,062	403*	4,480	1,632
1969	1,788	140*	2,080	1,316
1974	1,897	257	1,397	944
1978	1,537	216	68*	2,536
1982	1,812	*	1,423	1,290
1987	1,884	487	*	1,524
1992	1447	*	*	*
1997	2,930	292*		
2002	3,045	899	774	
2007	2,029	704	1,031	1,822

III. The APCC Farmland Inventory

Development of the inventory of farming on Cape Cod proved to be a complex and difficult task for a number of reasons:

- The definition of farming differs between the federal and state governments.
- The federal government and local governments use different methods to count the number of farms and acres of farmlands.
- The federal government census is based on counties, not towns.
- Town assessors may use different land use codes to identify farms.
- The size of a parcel in an assessor’s data table is not always the same as that captured through geocoding through a Geographic Information System.
- One parcel of land in an assessor’s database may have multiple land use codes, some identifying farming activities, some that do not.
- The assessors’ data indicate the size of a parcel that has an agricultural land use code; this is not the same as acres under cultivation or acres of active pastureland.
- Commercial farming activity may take place on a parcel that does not have an agricultural land use code.
- An agricultural land use code does not necessarily mean that a parcel is being actively farmed.
- Farmers may own or rent several parcels, sometimes in different towns.
- The number of farms, acres of farmlands and land under cultivation are not static.

For all of these reasons, the results presented here are to be considered estimates of the number of farms and acres of farms on Cape Cod.

A. Definitions of Farming and Farming Activities

The United States Department of Agriculture census center defines farming as: “Any operation selling at least \$1000 of agricultural commodities or that would have sold that amount of produce under normal circumstances. Where a commodity is defined as: grain and non-grain crops, vegetables, fruits, nuts, nursery plants, floriculture, Christmas trees, maple tree sap, animals, products from animals such as milk, eggs, etc. and any other agricultural production, excluding timber, forest and forest products.”

The Commonwealth of Massachusetts General Law Ch. 128 Section 1(a) states: “ ‘Farming’ or ‘agriculture’ shall include farming in all of its branches and the cultivation and tillage of the soil, dairying, the production, cultivation, growing and harvesting of any agricultural, aquacultural, floricultural or horticultural commodities, the growing and harvesting of forest products upon forest land, the raising of livestock including horses, the keeping of horses as a commercial enterprise, the keeping and raising of poultry, swine, cattle and other domesticated animals used for food purposes, bees, fur-bearing animals, and any forestry or lumbering operations, performed by a farmer, who is hereby defined as one engaged in agriculture or farming as herein defined, or on a farm as an incident to or in conjunction with such farming operations, including preparations for market, delivery to storage or to market or to carriers for transportation to market.”

The federal government census includes only those farms that sell \$1000 or more of agricultural commodities in one year. Massachusetts does not include a monetary minimum in the general definition. Another difference between the federal and state definitions of farming is that the federal

government excludes “timber, forest and forest products.” Whereas the Massachusetts law includes “any forestry or lumbering operations.”

Equine Species

The question of whether stabling horses or ponies constitute agriculture has been raised numerous times and has different answers. Related to that question is whether horse farms should be eligible for agricultural tax assessments and exemptions from regulation.

According to the American Farmland Trust “At one end of the spectrum are horse breeding operations where sales of horses (and semen) mean those facilities typically fall within the United States Department of Agriculture’s (USDA) definition of a farm—a place producing farm commodities having a market value of \$1,000 or more annually. At the other end of the spectrum are small stables that board horses and offer riding lessons. Most agricultural officials consider these operations “recreational,” and some have vigorously opposed efforts to extend agricultural status to them or allow them on easement-protected land.” The difference between the two is related to raising a product versus providing a service. The latter is not included in the USDA Census of Agriculture.

According to the American Farmland Trust, Massachusetts considers equine breeding operations to be an agricultural use. Boarding, riding and training may be ancillary activities only.

B. APCC Farmland Inventory Data Sources

USDA Census Data

The USDA has conducted an agricultural census of each county in the United States every five years since 1920. According to Amanda V. Pomictor of the National Agricultural Statistics Service, limited aquaculture statistics from the 5-year census of agriculture have been presented beginning in 1974. In 2005 the USDA conducted its second national Census of Aquaculture.

Although the USDA makes every effort to send the census to all entities that meet the federal definition of a farm (see above) and engages in follow up to increase the number of respondents, not all qualifying farmers receive the census and not all of those who receive the census respond. The response rate for the 2007 census was 85.2% compared with 88.0% for the 2002 census and 86.2% for the 1997 census.

Table 3. Percent adjustments to USDA 2007 census numbers in Massachusetts.

Census adjustments	Did not respond	Did not receive census
Massachusetts Farms		
Number of farms	16.28%	25.9%
Amount of acres	13.69%	15.01%
Amount of sales	9.93%	2.03%

The results of the USDA agriculture census do not reflect the information received from the census itself. Instead, the USDA uses statistical methods to adjust the census data in order to account for those who did not respond to the census and those who did not receive the census. Adjustments are made for each state. Table 3 shows the percent adjustments made for Massachusetts to account for those who did not receive or did not respond to the 2007 agricultural census.

The USDA census is based on counties instead of towns. It provides no information on the location of individual farm parcels. The census also omits any data that could be used to identify a particular farm. Thus, federal information was not used to determine the number or size of farms in the fifteen Cape towns, nor was it used to create maps of farmlands. Information from the census was used to provide information on different kinds of agricultural products as discussed later in this document.

Town Assessors’ Data

The land use codes of the Commonwealth of Massachusetts describe activities that occur on parcels of land. Town assessors frequently update the land use determinations. Land use Code 6 and Code 7 refer to agriculture lands that have received financial incentives under state law (Chapters 61, 61A). Chapters 61 offers incentive to those owning 10 contiguous acres of harvestable forest lands to keep their land as forest. Chapter 61A offer incentives for farmers with five or more acres in agricultural production to retain the land in agriculture use. This law is discussed in Section VI of this report.

Code 6 Forest Land

601 Productive Forest

Code 7 Agriculture/ Horticultural Land

710 Cranberry Bog

711 Tobacco, Sod

712 Truck Crops - vegetables

713 Field Crops - hay, wheat, tillable forage cropland, etc.

714 Orchards - pears, apples, grape vineyards, etc.

715 Christmas Trees

716 Necessary Related Land-farm roads, ponds, land under farm buildings

717 Productive Woodland - woodlots

718 Pasture

719 Nurseries

72 Non-Productive Land

720 Wetland, scrub land, rock land

There are other land use codes in Massachusetts for agricultural land uses.

210 Non-productive agricultural accessory land not included in Ch. 61A

317 Farm Buildings

318 Commercial Greenhouses

393 Agricultural/Horticultural Land not included in Ch.61 A

806 Commercial Horseback Riding

815 Productive Woodlands

Town assessors’ data were used to estimate the number of farms and acres of farm lands.

Other Sources of Information

In addition to information in the town assessors’ databases, other sources were used to identify land used for agriculture. These sources provided a physical address, which was then used to extract the parcel information from the assessors’ databases. These sources include:

- Southeastern Massachusetts Agricultural Partnership (SEMAP) Retail Farm Directory (www.semaponline.org)
- Edible Cape Cod Farm Resources page (www.ediblecommunities.com/capecod/)
- Barnstable County Green Industry Directory (www.mass.gov/agr/massgrown/capecod_green_industry_directory.pdf)
- Various newspaper articles and advertisements from regional sources such as but not limited to the Cape Cod Times, the Barnstable Patriot, and the Enterprise
- Cape Cod Cooperative Extension personnel
- Cape and Islands Farm Bureau members
- Town Agricultural Commission members

The above sources were also used to estimate the number of farms and acres of farmlands.

Although many Cape Cod residents partake in some form of farming, whether it is growing a few tomatoes, raising chickens or keeping bees, or stabling horses for pleasure, these activities of homeowners are not included in this inventory.

Aquaculture

Cultivation of marine and freshwater species is a major economic contributor to Cape Cod agriculture. Data on acreages of town shellfish grants in 2009 were obtained from the Massachusetts Division of Marine Fisheries and the Barnstable County Cooperative Extension.

Data Validation

The inventory was sent to various organizations and individuals to validate the findings. The Cape Cod Cooperative Extension, the Cape and Islands Farm Bureau and individuals from six town agricultural commissions are among those who reviewed the information in the inventory.

C. Number, Size and Kinds of Farms in Barnstable County

Definition of Farming for this Inventory

This inventory generally follows the Massachusetts definition of farming activities, meaning that forestry is included as an agricultural activity, but stabling of equine species for personal use is not. Property owners who raise livestock or crops for personal use are also not included.

Acres of Farmland

Agricultural land use codes in town assessors’ data were the main source used to identify lands where farming activities may occur, with the exception of some retail operations taking place on land zoned residentially or otherwise. Information on retail agricultural activity came from the Southeastern Massachusetts Agricultural Partnership, Cape Cod Buy Fresh Buy Local, Barnstable County Green Industry Directory, Cape Cod Cooperative Extension, Edible Cape Cod, Cape and Islands Farm Bureau, the Spinners Guild, stable permits, town agricultural commissions, the internet, and newspaper articles and advertisements. Retail outlets include those farms that utilize farm stands, farmers’ markets and other outlets to sell vegetables, flowers, fruits, fibers and other crops or livestock. Data from the Massachusetts Department of Marine Fisheries were used to quantify the acres of aquaculture grants.

Farms that advertise their crops and livestock and farms that have a Chapter 61 or Chapter 61A designation (see Section VI, to qualify for this program, a farm must have gross sales of \$500 or more) can be assumed to be active farms. However, for some parcels in the inventory, the only indication of agriculture is an agricultural land use code. In other cases an agricultural land use code is misleading. For example, the largest farmland parcel on Cape Cod is under the state Agricultural Protection Restriction program, but has not been farmed for more than one decade.

The size of a parcel that has an agricultural land use code or is otherwise known to have farming activity is not the same as acres under cultivation. It was not possible to quantify acres under cultivation, so the acreage of farmland reported in this inventory is more accurately the sum of the acres of parcels upon which some farming activity takes place.

The land use codes in town assessors’ databases apply to individual parcels. As one farmer may own more than one parcel, the assessors’ databases do not explicitly provide information on the number of farms. For the purposes of this inventory, an individual, owning and/or controlling more than one parcel with land use codes relating to agriculture (or residentially or other zoned parcel identified as a farming enterprise) was considered to be one farmer or potential farmer and the individual parcel acreages were summed to come up with a total acreage for a single farm or single potential farm.

For all of the reasons stated above it is likely that this inventory overstates the number of active farms and active farming activity and is best considered to be an estimate of the number of farms and acres of agriculture based on the available current information.

Results: Acres of Farmland and Numbers of Farms

Our results identify about 4,875 acres of actual or potential farmland and shellfish grants in Barnstable County in 2010 (Table 4). By contrast, the 2007 federal census estimates 5,233 acres of farmland, including aquaculture in Barnstable County. As noted above, the federal census adjusts numbers to account for farmers who did not receive the census or did not respond to the census. Our inventory identifies 294 farms or potential farms in 15 towns (Table 5) on Cape Cod.

Table 4. Total acreage of agricultural land (APCC Inventory October 2010) and aquaculture grants in Barnstable County towns (data from the Massachusetts Division of Marine Fisheries 2009).

Town	Agriculture (Acres)	Aquaculture (Acres)	Total Acreage
Barnstable	978.17	154	1152.17
Bourne	681.25	0	681.25
Brewster	281.58	8	289.58
Chatham	37.78	4	41.78
Dennis	175.53	31	205.53
Eastham	7.78	20	28.78
Falmouth	617.94	38	641.94
Harwich	336.64	0	336.64
Mashpee	81.03	27	107.03
Orleans	62.12	26	87.12
Provincetown	3.26	8	11.26
Sandwich	693.33	0	693.33
Truro	85.29	0	85.29
Wellfleet	2.97	262	235.97
Yarmouth	224.60	27	251.60
Total	4269.27	605	4874.27

Table 5 shows that the average size of farms in the 15 towns ranges from about 1 acre to about 27 acres, with a Cape-wide average of 14 acres.

Table 5. Average size of farms in Cape Cod towns.

Town	# of Farms	Average Size (acres)
Barnstable	47	20.8
Bourne	25	27.3
Brewster	29	9.7
Chatham	7	5.4
Dennis	26	6.8
Eastham	3	2.6
Falmouth	52	11.9
Harwich	32	10.5
Mashpee	10	8.1
Orleans	15	4.1
Provincetown	3	1.1
Sandwich	26	26.7
Truro	7	12.2
Wellfleet	1	3.0
Yarmouth	11	20.4
Total	294	4269.27
Average size Cape Cod		14.5

The size of farmlands varies widely on Cape Cod from a low of 0.19 acres to one 228-acre parcel that is not being farmed today. As seen in Table 6, the greatest number of farms are one to five acres in size; the second largest category is farms in the five to ten acre category. About 44% of the farms on Cape Cod are less than five acres in size. The following section on kinds of farming activity provides additional information on the size of farms in different farm categories.

Table 6. Range of Farm Sizes on Cape Cod.

Size of Farm (Acres)	# of Farms	Acres
< or = to 1	42	28
>1 to 5	85	219
>5 to 10	67	467
>10 to 20	44	652
>20 to 30	22	521
>30 to 40	10	347
>40 to 50	4	176
>50 to 75	10	572
>75 to 100	3	276
>100 to 125	2	224
>125 to 150	4	558
> 200	1	228
Total	294	4269

Kinds of Farming Activity

For the purpose of this inventory the Massachusetts’ definition of kinds of farming was used. Thus, forestry products and garden centers are included in addition to truck farms, pasture lands, raising of livestock, and other typical farming activities in the inventory.

Multiple kinds of farming activity can take place on a single farm. In cases where land is under Chapter 61A, the type of farming activity may be identified (pasture, orchard, nursery, cranberry bog, field crops), however, it was usually not possible to determine how many acres of any given parcel were devoted to a particular kind of crop or livestock. This inventory groups farming activities into the following categories.

General: This category includes lands that are zoned for agriculture use and lands that are zoned otherwise but that have been identified as being used for general commercial agriculture activities, such as truck farming and the raising of animals for food and fiber. This category also includes nurseries that are under Chapter 61 or 61A.

Commercial Stables: This category refers to those establishments that provide stables for equine species or riding opportunities for pay. Excluded are homeowners or property owners where equine species are stabled for private use, or where other species (rabbits, chickens, goats, sheep, etc) are stabled for private use.

Cranberry Bogs: This category includes cranberry bogs and also the necessary lands associated with cranberry bog cultivation.

Garden Centers, Greenhouses and Trees & Shrubs: Greenhouses and garden centers are commercial establishments that may sell vegetables, flowers, trees and shrubs, which may or may not be “grown” on the parcel. (Although these parcels have an agricultural land use code in the town assessor database, or advertize as retail farms, none of these are under the state Chapter 61 or 61A program. Some, but not all of the parcels in the trees and shrubs category are tree farms that are in the Chapter 61 or Chapter 61A program.)

Wood Products: This category includes forests that are used to produce lumber or wood. Tree farms are not included in this category.

Cranberry farming comprises the largest farming category on Cape Cod, followed by the general category. Figure 3 and Table 7 depict the number of farms and acres of farmlands in the different farming categories.

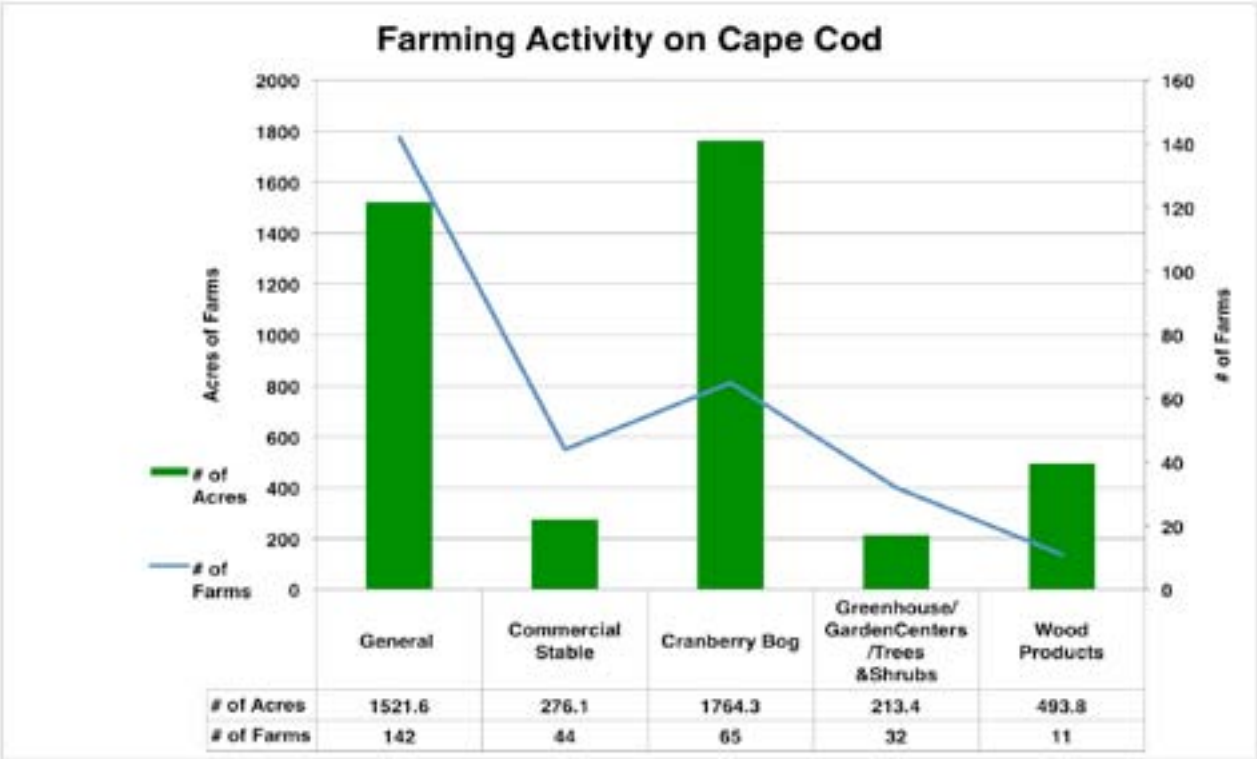


Figure 3. Number and Acres of Farms in Different Farming Categories.

Table 7. Farming Activity on Cape Cod (Numbers of Farms, Acres and Average Size).

Type of Farming Activity	# of Farms	# of Acres	Average
General (“Truck Farming,” etc.)	142	1521.6	10.72
Commercial Stable	44	276.1	6.28
Cranberry Bog	65	1764.3	27.14
Greenhouse/Garden Centers/Trees & Shrubs	32	213.4	6.67
Wood Products	11	493.8	44.89
Total	294	4269	14.52

Agricultural Lands in State Incentive Programs

As will be described in detail in Section VI, some agricultural lands are in state farmland programs, either Chapters 61 and Chapter 61A or the Agriculture Protection Restriction (APR) program. These programs offer incentives to farmers to keep their lands in active agriculture use. As Figure 4 illustrates, approximately 60% of farm acreage on Cape Cod is under such programs. Almost 80% of cranberry bogs and almost all farms in the wood product category are included in Chapter 61A. Of the 294 farmers in our inventory 104 or about 35% participate in these programs.

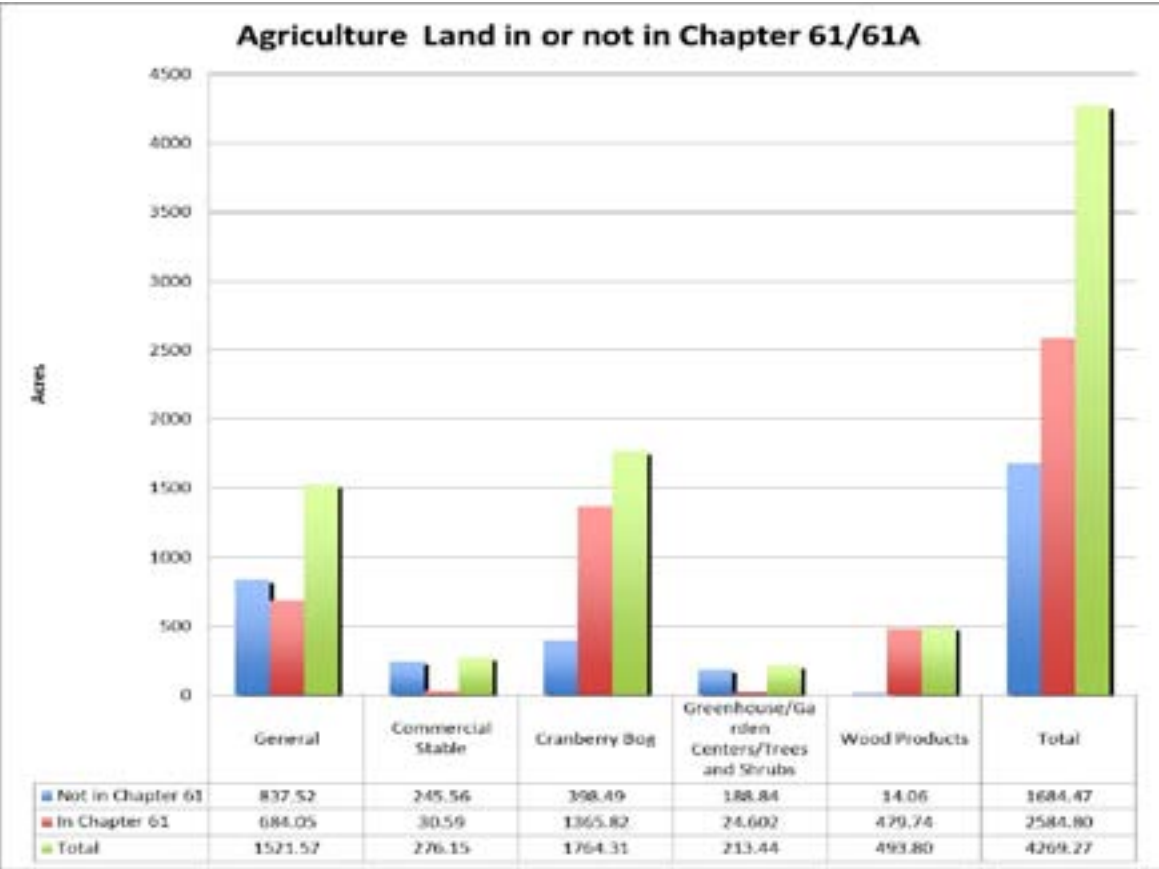


Figure 4: Kinds of farms and acres of farmland that are under state agriculture protection programs.

There were 605 acres of actively designated shellfish growing areas in Barnstable County in 2009, the last year for which data are available (Table 8). With 262 acres, the Town of Wellfleet has the highest amount of acreage devoted to aquaculture on Cape Cod. The shellfish grown by private growers in these grants include oysters, quahogs, soft shell clams, razor clams, and mussels. Between 2001 and 2009, the total acreage of shellfish growing areas has increased slightly across the Cape. Table 9 shows the number of license holders and licenses for 2006.

Table 8. Acres of shellfish grants on Cape Cod from 2001 through 2009 (data courtesy of the Massachusetts Department of Marine Fisheries).

Town	Aquacultural Acreage								
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Barnstable	171	174	174	174	174	163.7	178	167.17	154
Brewster	5.5	7	7	7	8	9.5	10	8.25	8
Chatham	4	4	4	4	4	4	4	4	4
Dennis	6	17	31	29	28	31	31	31	31
Eastham	17.25	21	21	18	54	26.7	21	17.7	20
Falmouth	22	22	22	22	21	24	24	37	38
Mashpee	27.35	26	26	26	26	26	26	25.5	27
Orleans	20.25	26	26	25	25	25	25	23.25	26
Provincetown	14	12	11	8	8	10	8	8	8
Truro	12								
Wellfleet	220.77	228	233	229	233	233.2	233	239.8	262
Yarmouth	29.75	30	30	27	27	27.5	27	27.25	27
Total	549.87	567	585	569	608	580.6	587	588.92	605

Table 9. Number of license holders and number of shellfish grant licenses in 11 Cape towns in 2006 (data courtesy of Massachusetts Department of Marine Fisheries).

Town	License Holders	Licenses	Acres
Barnstable	50	65	163.7
Brewster	9	9	9.5
Chatham	1	1	4.0
Dennis	29	29	31.0
Eastham	29	31	26.7
Falmouth	2	3	24.0
Mashpee	6	8	26.0
Orleans	17	18	25.0
Provincetown	7	7	10.0
Wellfleet	80	110	233.2
Yarmouth	4	5	27.5
Total	234	286	580.5

Farm Products

A large variety of farm products are grown on Cape Cod. Farmers’ markets and roadside stands offer an increasingly diverse selection of vegetables, fruits, and flowers, as well as fibers, honey and other products. Each year also sees an increase in the number of farms offering eggs and livestock for sale. Tables 10 and 11 indicate the number of farms and the range of crops and livestock raised on Cape Cod according to the USDA 2007 agricultural census. The national census is meant to be anonymous. When publication of the amount of crop or livestock would lead to the identity of the farm, the national census omits that information.

Table 10. Crops raised in Barnstable County (data from the 2007 USDA National Agricultural Census). Data on the number of acres are omitted where such information would lead to the identification of a particular farm.

Product	# of Farms	# of Acres
Asparagus	1	
Beans, snap	16	6
Beets	7	3
Broccoli	5	2
Carrots	8	3
Celery	2	
Cucumbers and pickles	5	
Eggplant	4	
Garlic	1	
Herbs, fresh cut	2	
Kale	1	
Lettuce	8	4
Onions, green	2	
Onions, dry	1	

Product	# of Farms	# of Acres
Peas (not snow or sugar)	2	
Peppers, bell	9	3
Peppers, other		6
Potatoes	12	4
Pumpkins	4	6
Radishes	1	
Squash, all	6	1
Corn, sweet	3	
Sweet potatoes	1	
Tomatoes	26	14
Watermelons	1	
Vegetables, other	9	11
Apples	3	
Apricots	1	
Grapes	5	
Peaches	2	
Pears	1	
Plums and prunes	3	1
Nuts	1	
Other orchard products	1	
Berries	91	1127
Blackberries	2	
Blueberries, tame	28	41
Blueberries, wild	6	
Cranberries	54	1071
Raspberries	14	5
Strawberries	7	
Berries, other	1	

Table 11. Livestock in Barnstable County (data from the 2007 USDA National Agricultural Census on livestock). Data on the number of animals are omitted where such information would lead to the identification of a particular farm.

Livestock	# of Farms	# of Animals
Cattle	16	32
beef	6	
milk	3	
Hogs	14	
Sheep and Lambs	29	64
Laying hens	57	1520
Broilers and other meat	3	
Pullets to replace layers	11	215
Turkeys	5	
Ducks	32	
Geese	11	47
Quail	4	212
Other Poultry	10	47
Horses	69	656
Goats	35	126
milking goats	7	29
angora	8	
Mules, burrows and donkeys	15	33
Rabbits	20	49
Llamas	2	

Shellfish species actively grown in Cape waters include quohogs, oysters and soft shelled clams.

D: Location of Farms and of Prime Agricultural Soils

Location of Farm Parcels on Cape Cod

GIS data from the state and towns were used to construct maps illustrating the parcels of land upon which agriculture activity takes place. As shown in Figures 5 and 6, all towns on Cape Cod have some agriculture land.



Figure 5. Locations of farms on the western half of Cape Cod.



Figure 6. Locations of farms on the eastern half of Cape Cod.

Prime Agricultural Soils on Cape Cod

The USDA defines prime farmland in the Barnstable County Interim Soils Report issued in 1987 as: “Land that is best suited to producing food, feed, forage, fiber, and oilseed crops. It has the soil quality, growing season, and moisture supply needed to produce a sustained high yield of crops while using acceptable farming methods. Prime farmland produces the highest yields and requires minimal amounts of energy and economic resources, and farming it results in the least damage to the environment.”

Prime agricultural soils may consist of one or a mixture of the following:

- Amostown sandy loam, 0 to 5% slopes
- Belgrade silt loam, 3 to 8% slopes
- Boxford silt loam, 0 to 3% slopes
- Deerfield loamy fine sand, 0 to 5% slopes
- Enfield silt loam, 0 to 3% slopes
- Hinesburg sandy loam, 0 to 3% slopes
- Hinesburg sandy loam, 3 to 8% slopes
- Merrimac sandy loam, 0 to 3% slopes
- Merrimac sandy loam, 3 to 8% slopes
- Nantucket sandy loam, 3 to 8% slopes
- Sudbury fine sandy loam, 0 to 3% slopes
- Walpole sandy loam, 0 to 3% slopes

State classified prime agricultural soils are very unevenly distributed on Cape Cod as seen in Figure 7, with most of the prime soils located on the upper Cape and much of that within the borders of the Massachusetts Military Reservation.



Figure 7. Prime agricultural soils on Cape Cod.

Farms and Prime Soil

Over much of the past half century, residential subdivisions have replaced what was agricultural land on Cape Cod. These flat acres were arguably the least expensive land to subdivide into house lots. These lands also often were those with the best soils for agriculture. The agricultural history of some of these places is now apparent only in the name of the subdivision, names such as “Old Farm Estates” or “Farmer’s Lane.”

As a parcel of land may include parts that are on prime soils and parts that are not, the information in this inventory is based on acreages on prime/not prime soil, instead of parcels or farms. Most farms on Cape Cod are not located on prime soils. Our analysis shows about 13% of farms are on prime soils (570 acres) and about 87% (3,700 acres) are not on prime soils. Figure 8 illustrates the acreage of farms on or not on prime soils in the 15 Cape towns.

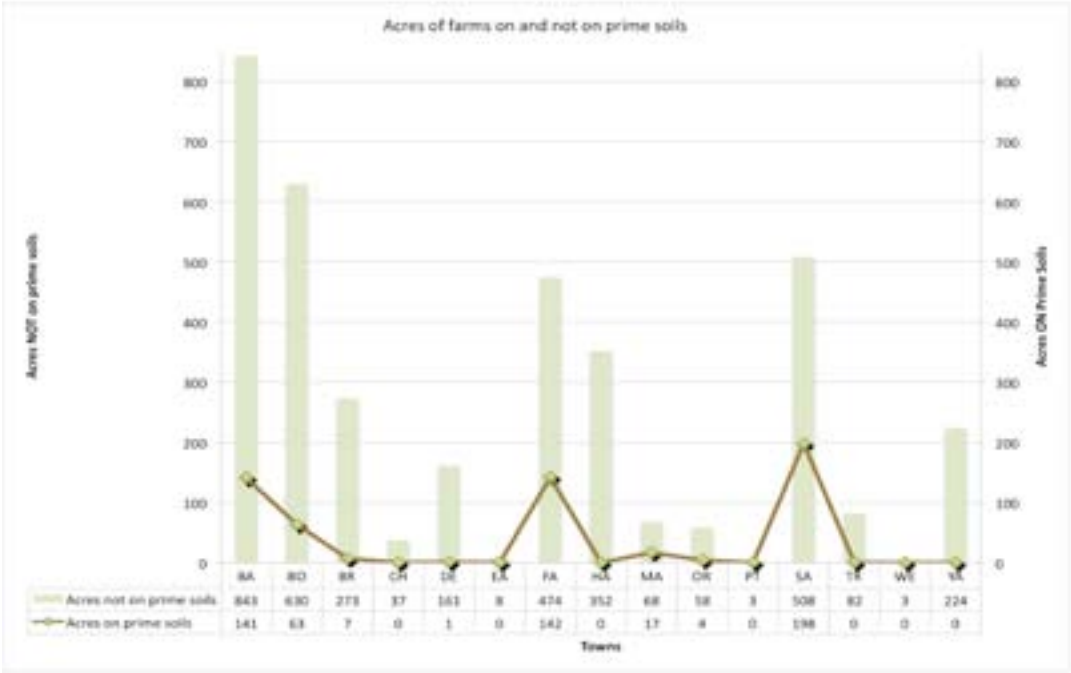


Figure 8. Acres of farms on or not on prime soils.

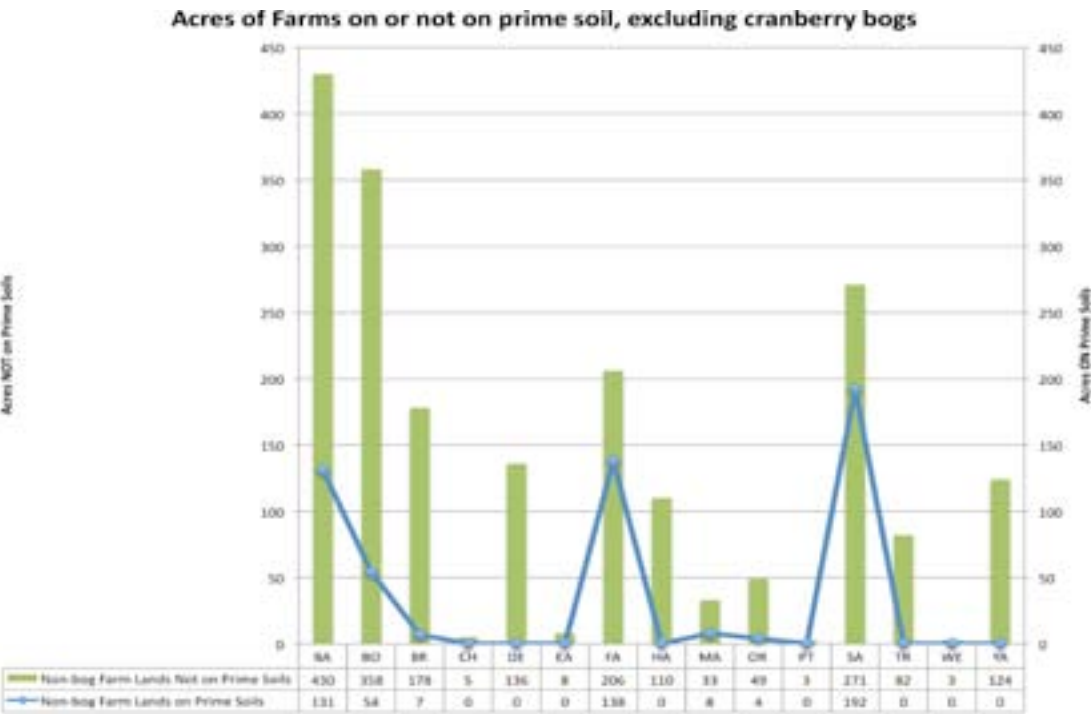


Figure 9. Acres of farms on or not on prime soils excluding cranberry bogs.

Cranberry bogs compromise approximately one-half of Cape Cod farms. Their cultivation requires sand and sandy soils, rather than prime agricultural soil. As figure 9 shows, even when cranberry bogs are eliminated, only 21% of agricultural activity takes place on prime soils on Cape Cod.

Figures 10 through 18 show the locations of farms that have some acreage on prime soils and the farms that have no acreage on prime soil in Barnstable, Bourne, Brewster, Chatham, Dennis, Falmouth, Mashpee, Orleans and Sandwich. The other five towns have either very little, or no prime agricultural soils and no farms on prime agricultural soils.

As soils can be amended to produce abundant healthy crops, prime agricultural soils are not a prerequisite to farming activity. However, they are by definition highly suitable to agricultural activity and are very valuable resource, which should not be squandered. In fact, the state takes the existence of prime agricultural soils into consideration when granting a farm entry into the state Agricultural Protection Restriction Program. This program is described in Section VI of this report.

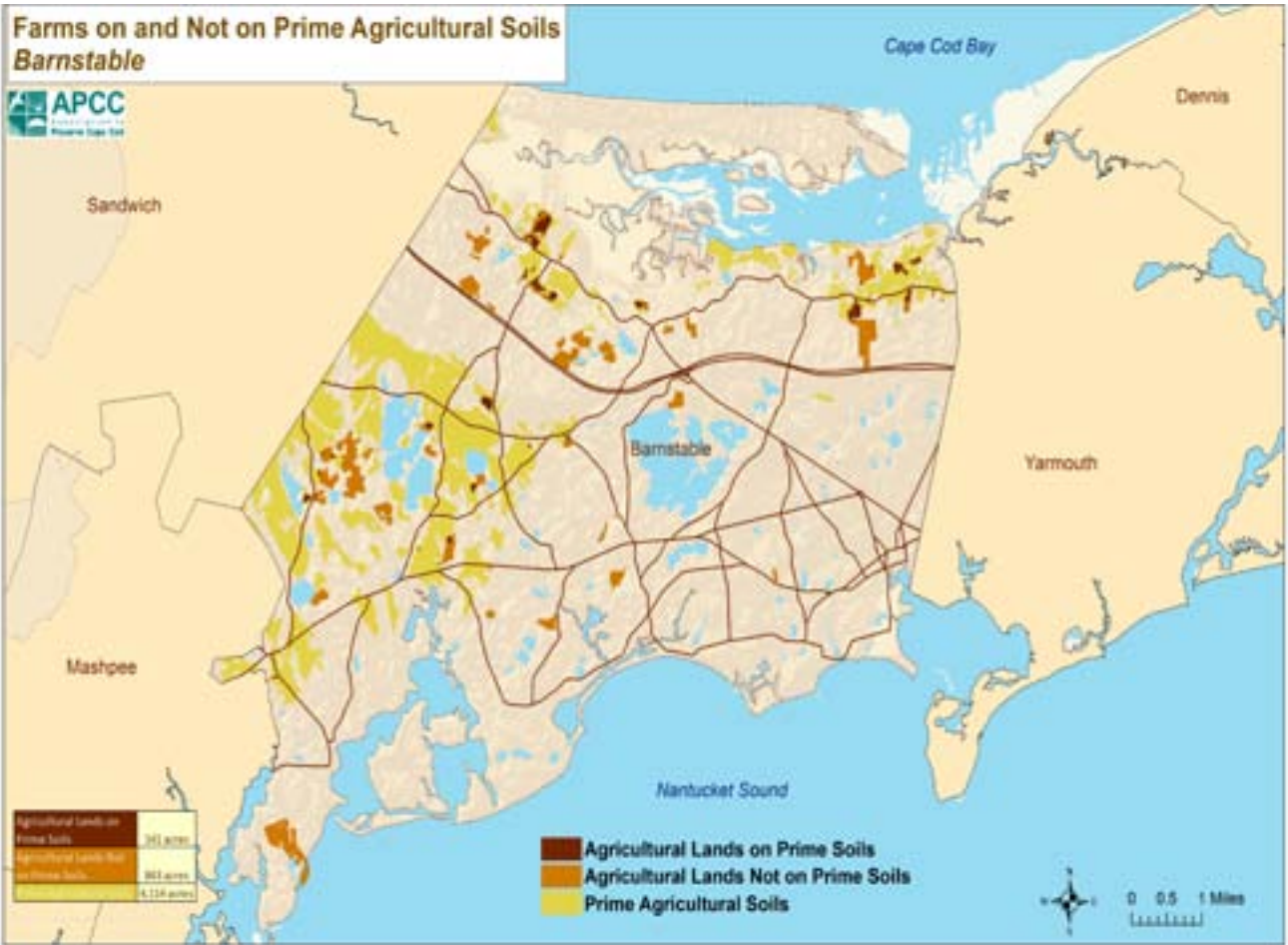


Figure 10. Farms on and not on prime agricultural soils, Barnstable.



Figure 11. Farms on and not on prime agricultural soils, Bourne.



Figure 12. Farms on and not on prime agricultural soils, Brewster.



Figure 13. Farms on and not on prime agricultural soils, Chatham.



Figure 14. Farms on and not on prime agricultural soils, Dennis.



Figure 15. Farms on and not on prime agricultural soils, Falmouth.



Figure 16. Farms on and not on prime agricultural soils, Mashpee.



Figure 17. Farms on and not on prime agricultural soils, Orleans.

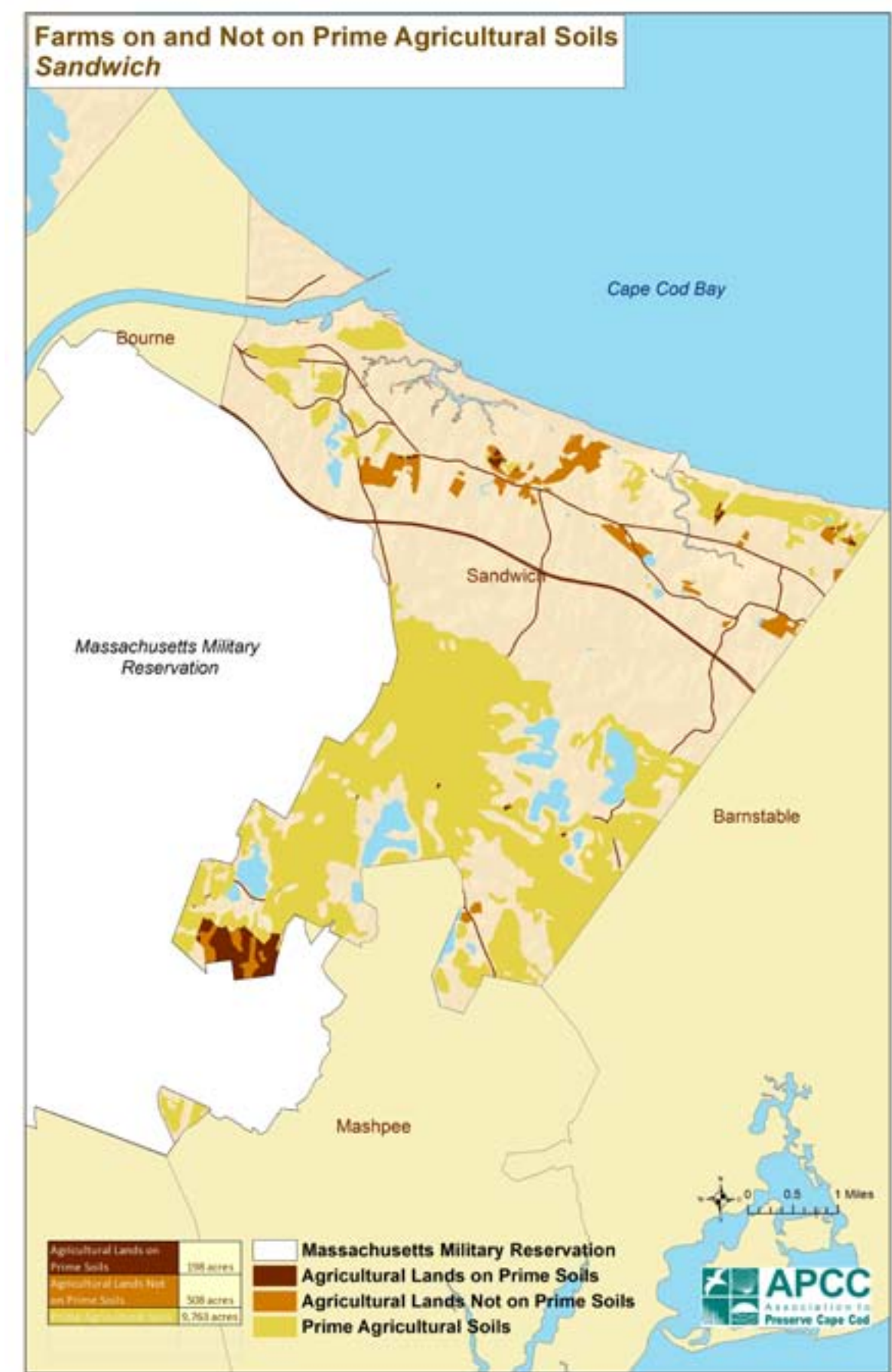


Figure 18. Farms on and not on prime agricultural soils, Sandwich.

Developable land on prime soils

For the purpose of this report, developable land on Cape Cod includes residential, commercial or industrial property that is developable, but not yet developed, or underdeveloped property. An example of underdeveloped land could be a 10-acre parcel with one house on it in a one-house/acre residential zoning district. It could also be a commercial property with structures, setbacks and parking less than the underlying zoning allows.

This analysis of developable land on prime soil includes undeveloped residential land of any size and underdeveloped residential land of five acres or larger. It also includes undeveloped commercial and industrial land. Underdeveloped commercial and industrial lands were excluded as it was beyond the scope of this effort to undertake the rigorous analysis necessary to assess the amount of additional development allowable under zoning on underdeveloped commercial and industrial properties.

Based on the criteria established in the previous paragraph, our analysis reveals a little less than 3,000 acres of prime soil on Cape Cod are undeveloped or underdeveloped residentially-zoned land (Figure 19). Of this about 2/3 is undeveloped private land on prime soil and about 1/3 is underdeveloped residential land on prime soil. As Figure 19 shows, nine towns on Cape Cod have developable land on prime soils. Most prime agricultural soils occur on the upper Cape into the town of Barnstable and most of the developable land on prime soils is also found in this area of Cape Cod.

Current Farming Activity and Future Prospects

Further analysis reveals that the majority of this developable land on prime soils is in small parcels. The following figures (Figure 20-23) illustrate this finding, showing the range of sizes of developable land on prime soils in Barnstable, Brewster, Falmouth and Sandwich.

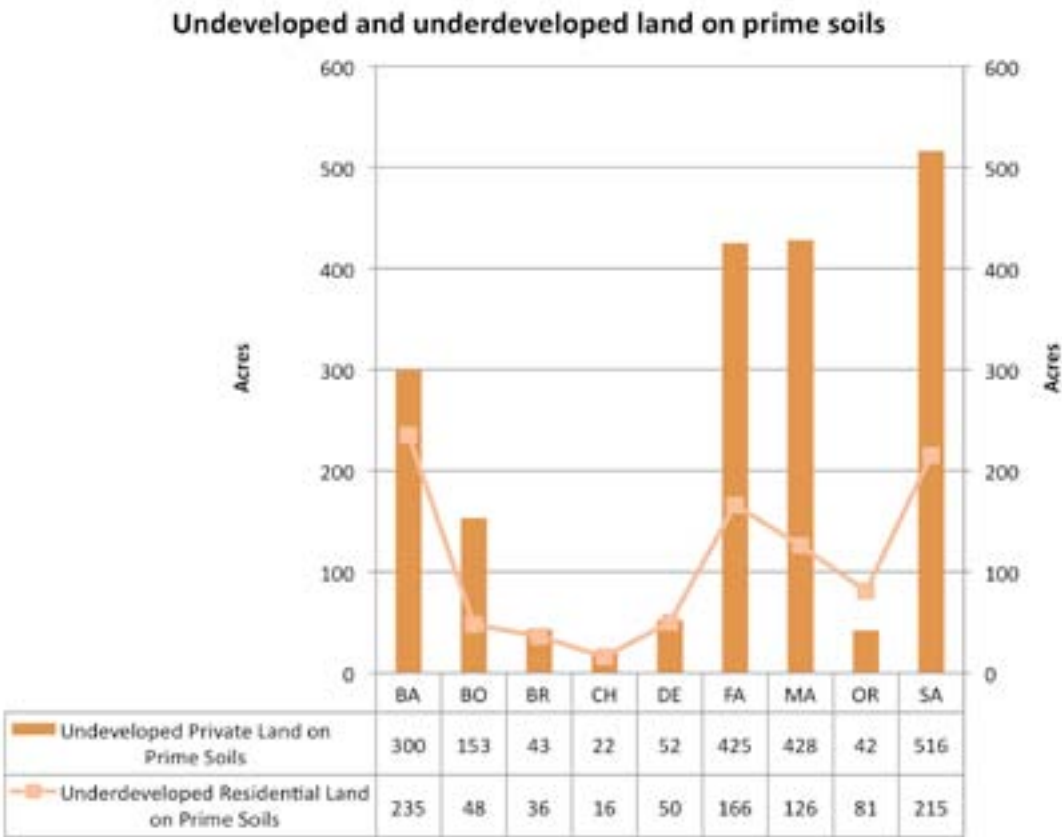


Figure 19. Undeveloped private land and underdeveloped residential land on prime soils.

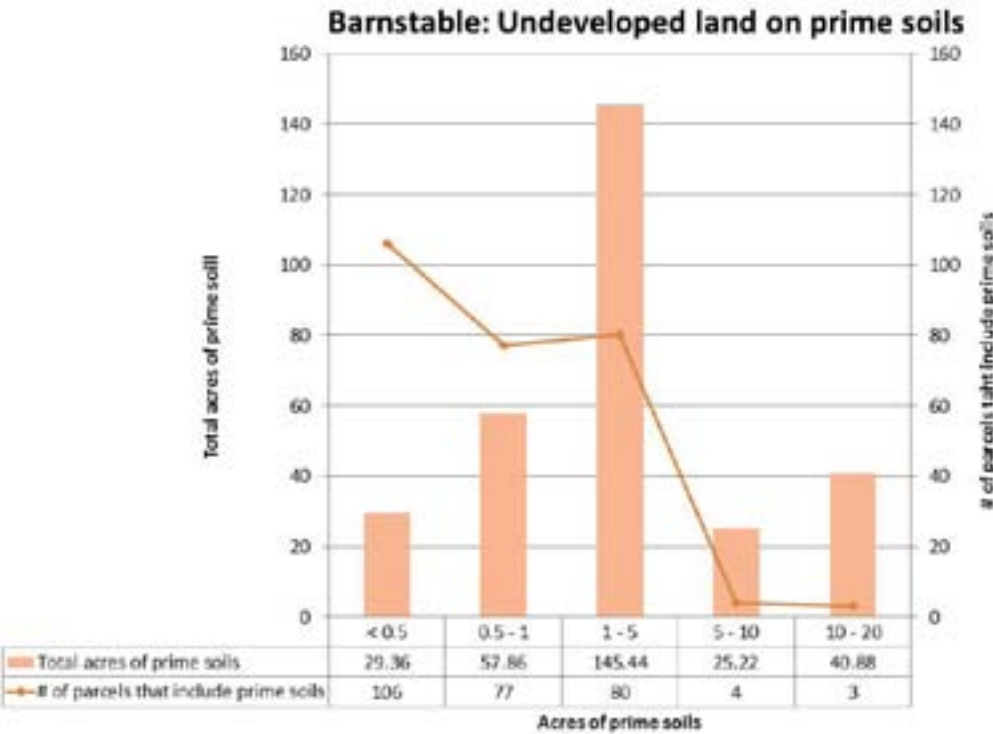


Figure 20. Undeveloped private land and underdeveloped residential land on prime soils in the town of Barnstable.

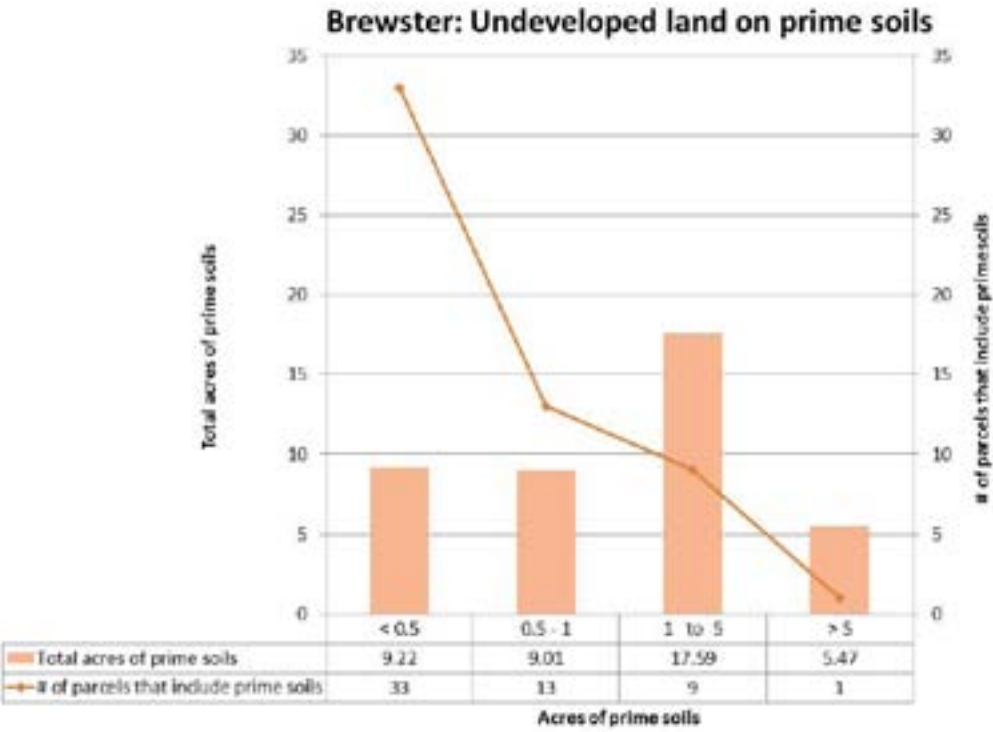


Figure 21. Undeveloped private land and underdeveloped residential land on prime soils in the town of Brewster.

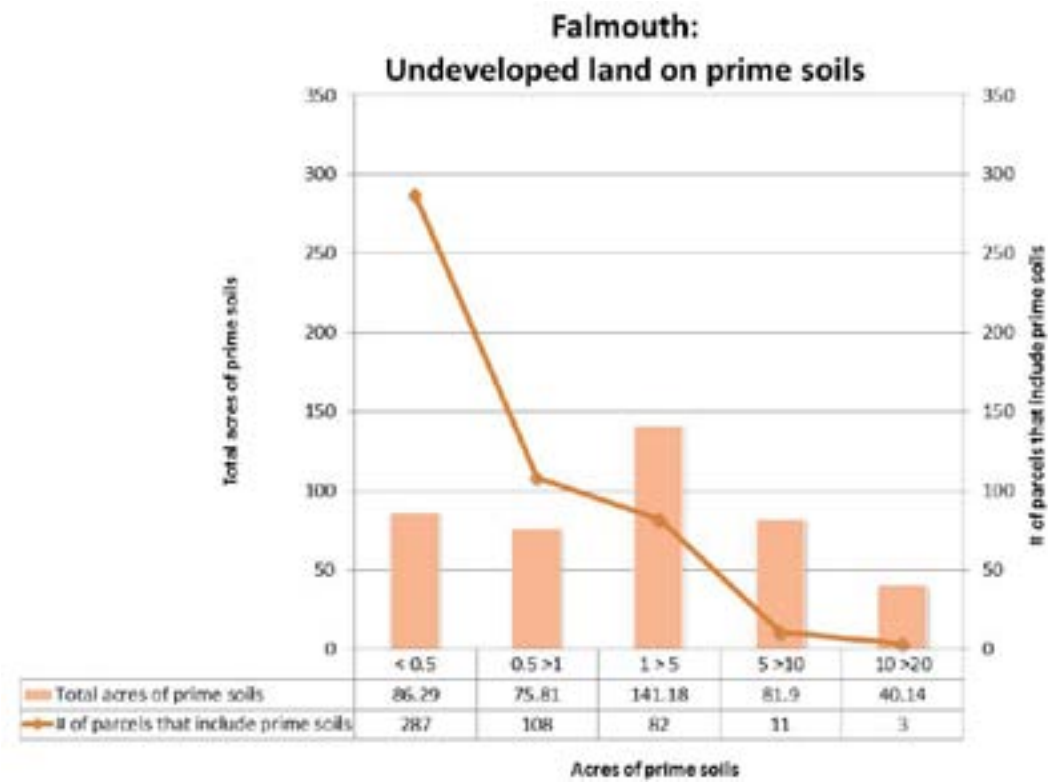


Figure 22. Undeveloped private land and underdeveloped residential land on prime soils in the town of Falmouth.

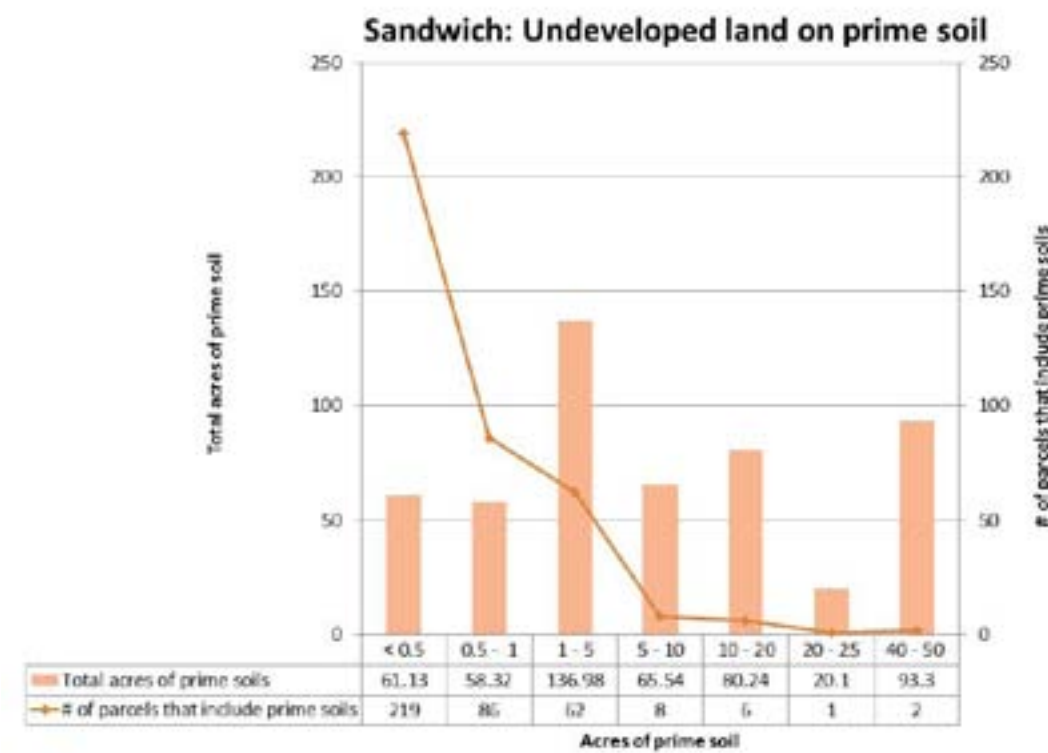


Figure 23. Undeveloped private land and underdeveloped residential land on prime soils in the town of Sandwich.

Figures 24-32 are maps of undeveloped and underdeveloped land on prime soil in the nine towns on Cape Cod that have developable land on prime soils.

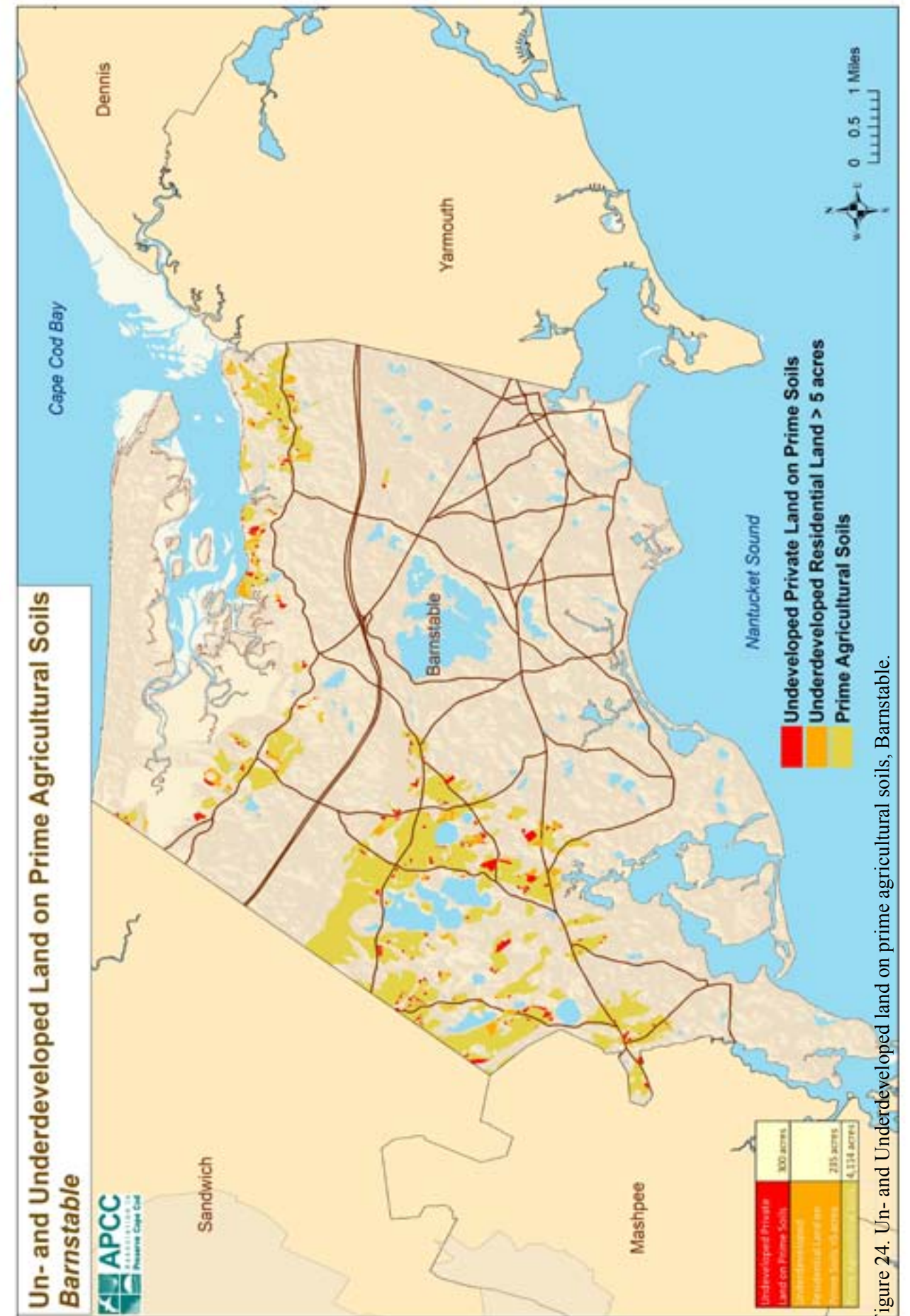


Figure 24. Un- and Underdeveloped land on prime agricultural soils, Barnstable.



Figure 25. Un- and Underdeveloped land on prime agricultural soils, Bourne.

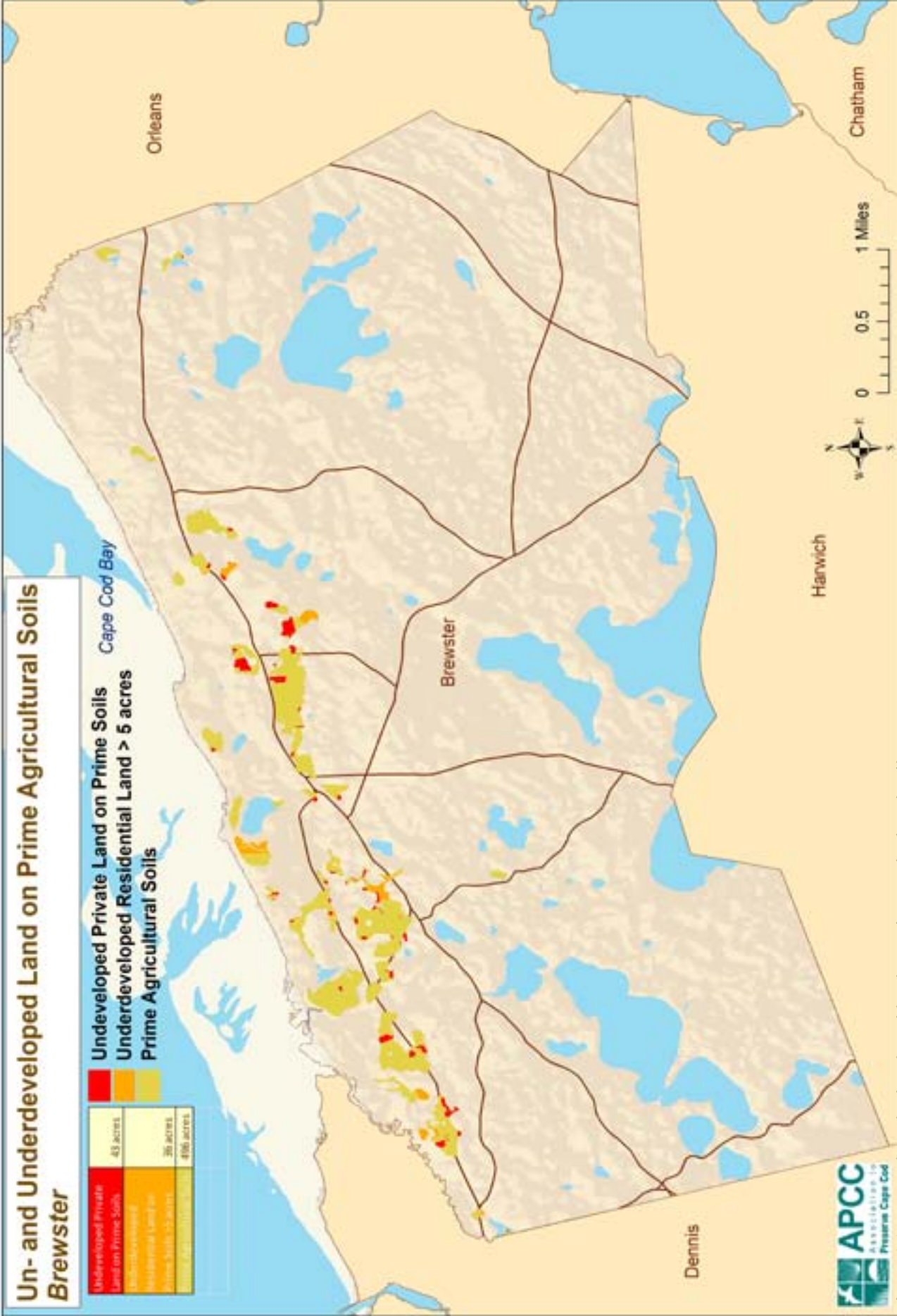


Figure 26. Un- and Underdeveloped land on prime agricultural soils, Brewster.



Figure 27. Un- and Underdeveloped land on prime agricultural soils, Chatham.

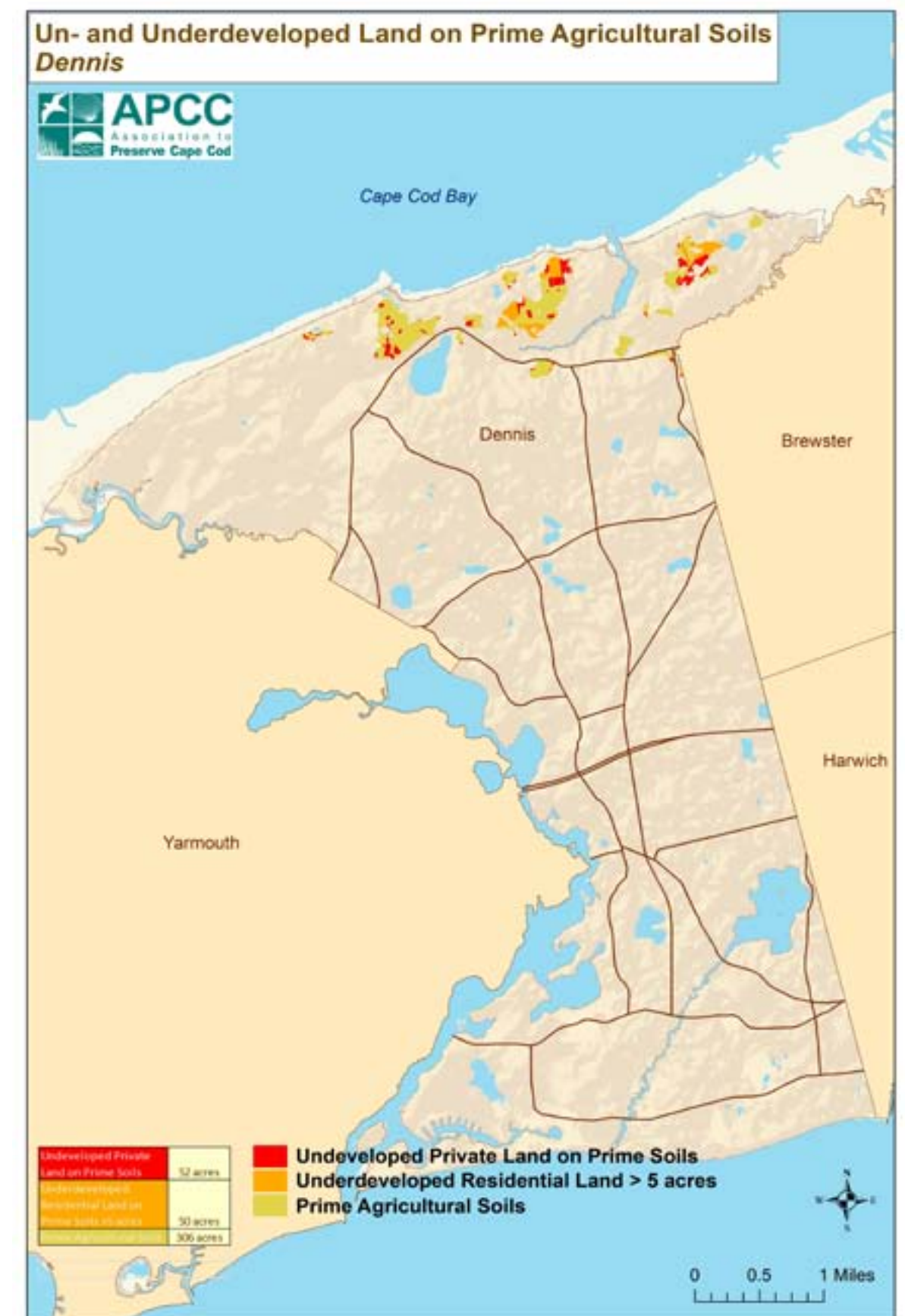


Figure 28. Un- and Underdeveloped land on prime agricultural soils, Dennis.

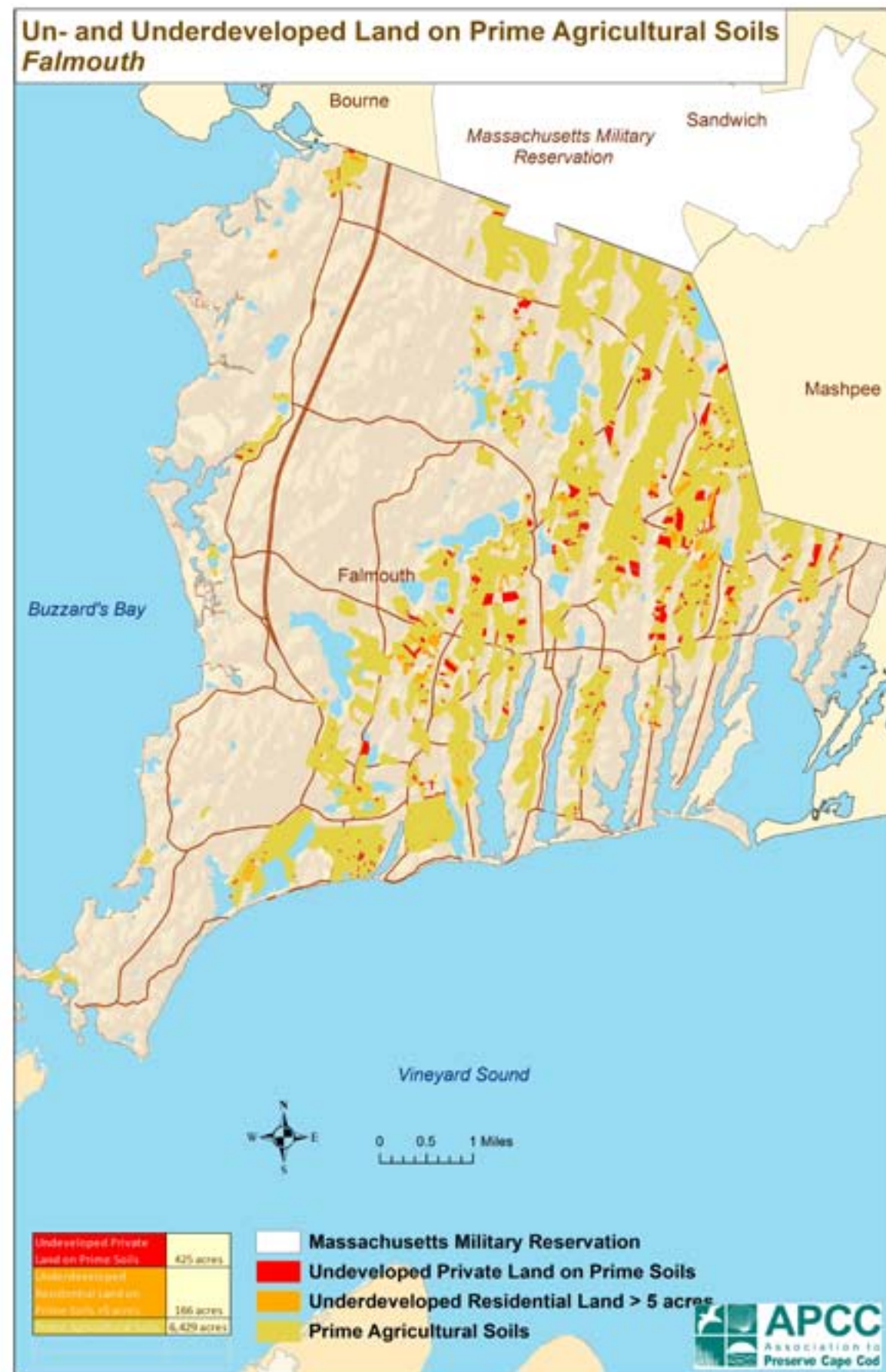


Figure 29. Un- and Underdeveloped land on prime agricultural soils, Falmouth.

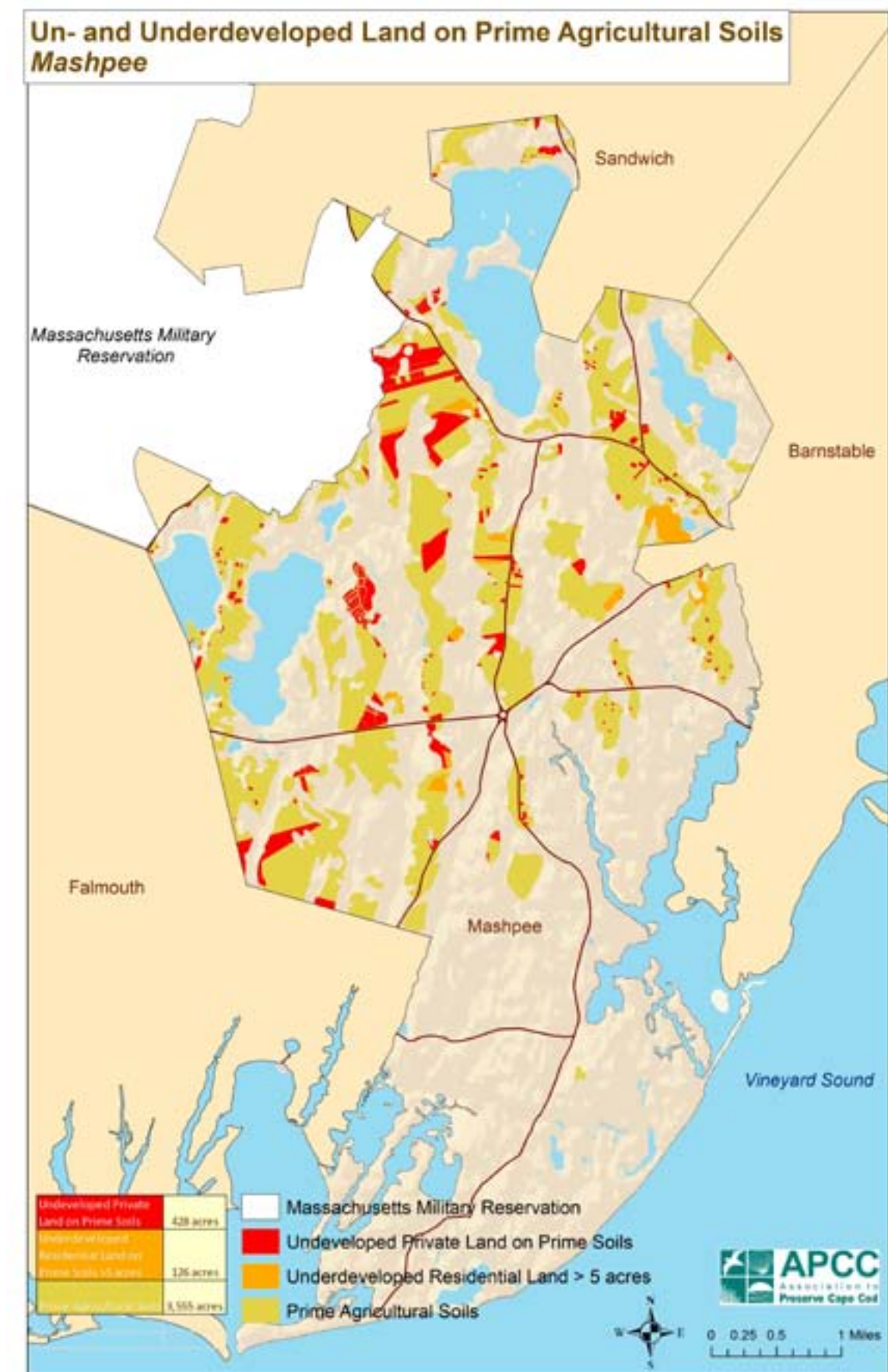


Figure 30. Un- and Underdeveloped land on prime agricultural soils, Mashpee.

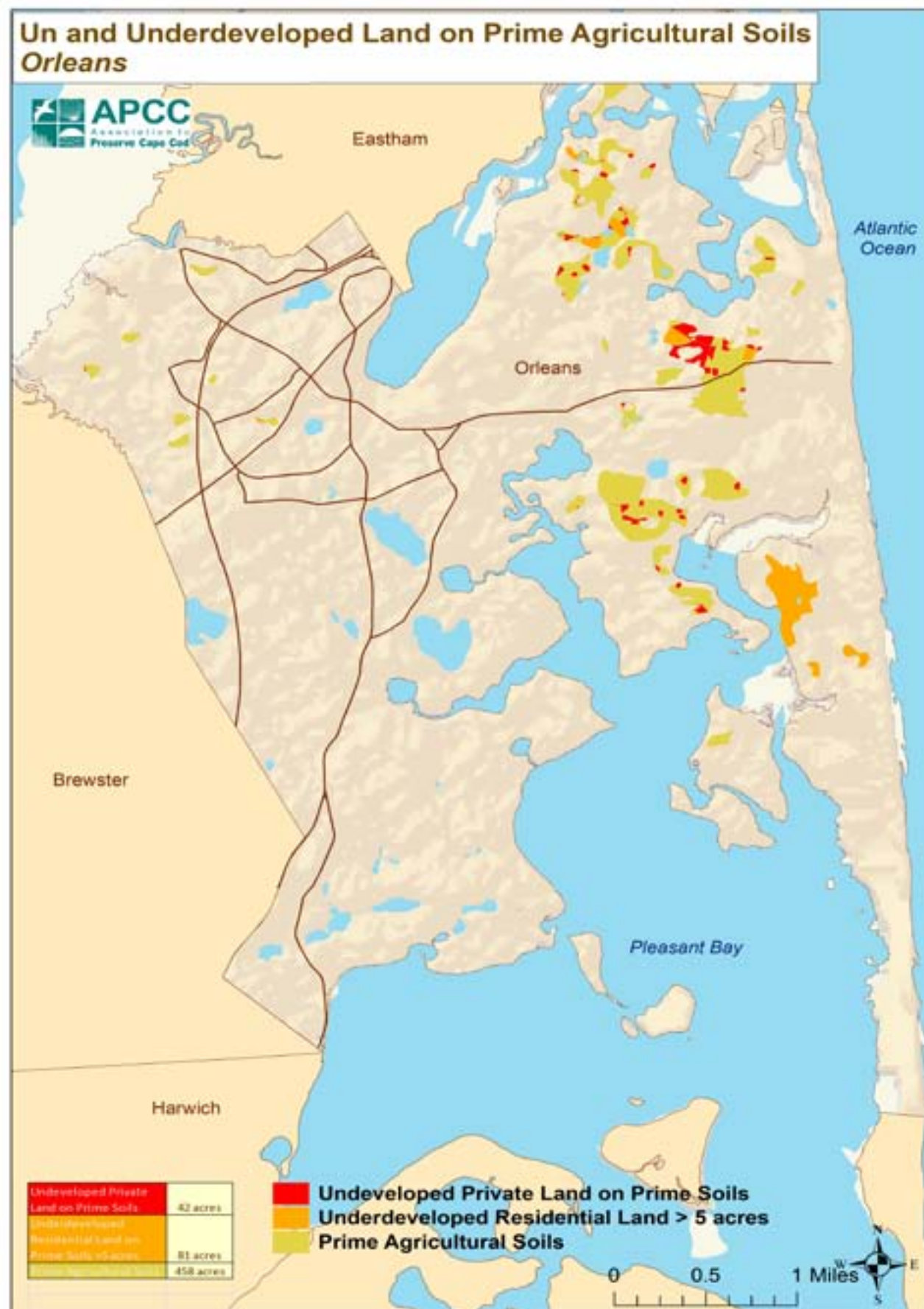


Figure 31. Un- and Underdeveloped land on prime agricultural soils, Orleans.

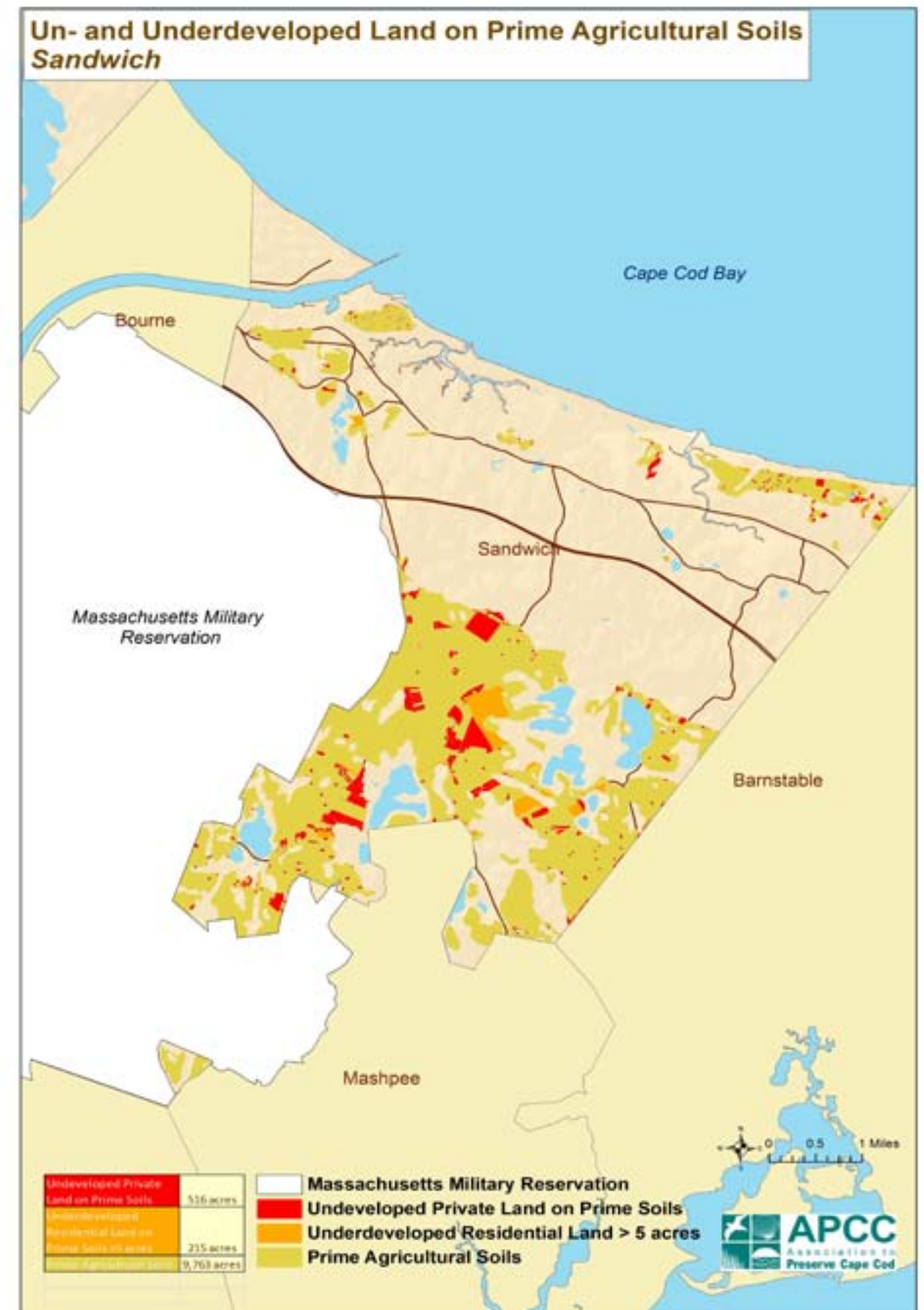


Figure 32. Un- and Underdeveloped land on prime agricultural soils, Sandwich.

E. Economic and Labor Contribution of Barnstable County Agriculture

Sales of Cape Cod Agricultural Products

The United States Department of Agriculture (USDA) includes the dollar value of sales of different kinds of agricultural products (Table 12). Fruits and berries (cranberries) and nursery and greenhouse operations accounted for most sales of products in 2002 and in 2007.

USDA aquaculture data for 2007 were about twice the amount (\$7,349,000) reported by the state of Massachusetts (\$3,485,403) and by far higher than any records in the past decade for Barnstable County. For that reason, this report uses state rather than federal information for sales of aquaculture (Figure 33).

Table 12. Value of sales of agricultural products in 2002 and 2007. Data from the USDA census, except for aquaculture data, which are from the Massachusetts Department of Marine Fisheries. Data are omitted where such information would lead to the identification of a particular farm.

Crops/ Livestock	2002	2007
Vegetables, Melons, Potatoes, and Sweet Potatoes	\$539,000	\$830,000
Fruits and Berries	\$3,340,000	\$5,458,000
Nursery, Greenhouse, Floriculture, and Sod	\$4,695,000	\$3,827,000
Christmas Trees and Woody Shrubs	\$19,000	\$15,000
Other Crops (Hay)	\$14,000	\$13,000
Poultry and Eggs	\$9,000	\$32,000
Cattle and Calves	\$12,000	-
Hogs and Pigs	\$4,000	-
Sheep and Goats	\$9,000	\$25,000
Horses	\$313,000	-
Other Animal Products	\$19,000	\$29,000
Subtotal	\$8,973,000	\$10,229,000
Aquaculture	\$2,754,471	\$3,485,403
Total Agriculture	\$11,727,471	\$13,714,403

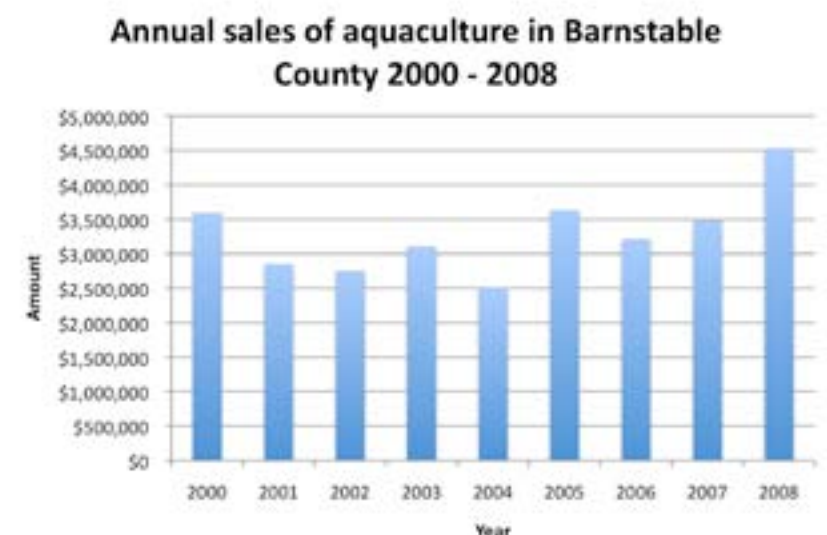


Figure 33: Sales of aquaculture products in Barnstable County from 2000 through 2008. Data from the Massachusetts Department of Marine Fisheries.

A number of different kinds of shellfish are grown commercially in Barnstable County. Table 13 provides a breakdown of 2008 data by town of the kind, amount and value of shellfish grown in Cape Cod waters.

Table 13. Aquaculture in 11 Cape Cod Towns in 2008. (Data courtesy of Massachusetts Department of Marine Fisheries.

Town	Species	Bushel	Value/bushel	2008 Dollar Value
Barnstable	Quahogs (neck)	1749	\$60	\$104,940
	cherry	286	\$28	\$8,008
	chowder	17	\$15	\$255
	Am. Oyster	15196	\$110	\$1,671,560
	Soft Shelled Clam	1669	\$75	\$125,175
	Total	18917		\$1,909,938
Brewster	Quahogs (neck)		\$60	\$0
	cherry		\$28	\$0
	chowder		\$15	\$0
	Am. Oyster	227	\$110	\$24,970
	Soft Shelled Clam		\$75	\$0
	Total	227		\$24,970
Chatham	Quahogs (neck)	20	\$60	\$1,200
	cherry	25	\$28	\$700
	chowder	17	\$15	\$255
	Am. Oyster	1474	\$110	\$162,140
	Soft Shelled Clam		\$75	\$0
	Total	1536		\$164,295
Dennis	Quahogs (neck)		\$60	\$0
	cherry		\$28	\$0
	chowder		\$15	\$0
	Am. Oyster	1965	\$110	\$216,150
	Soft Shelled Clam		\$75	\$0
	Total	1965		\$216,150
Eastham	Quahogs (neck)	289	\$60	\$17,340
	cherry	41	\$28	\$1,148
	chowder	8	\$15	\$120
	Am. Oyster	474	\$110	\$52,140
	Soft Shelled Clam	24	\$75	\$1,800
	Total	836		\$72,548
Falmouth	Quahogs (neck)		\$60	\$0
	cherry		\$28	\$0
	chowder		\$15	\$0
	Am. Oyster	30	\$110	\$3,300

Town	Species	Bushel	Value/bushel	2008 Dollar Value
	Soft Shelled Clam		\$75	\$0
	Total	30		\$3,300
Mashpee	Quahogs (neck)	10	\$60	\$600
	cherry	6	\$28	\$168
	chowder		\$15	\$0
	Am. Oyster	0.5	\$110	\$55
	Soft Shelled Clam		\$75	\$0
	Total	16.5		\$823
Orleans	Quahogs (neck)	482	\$60	\$28,920
	cherry	8	\$28	\$224
	chowder	15	\$15	\$225
	Am. Oyster	1446	\$110	\$159,060
	Soft Shelled Clam	15	\$75	\$1,125
	Total	1966		\$189,554
Provincetown	Quahogs (neck)		\$60	\$0
	cherry		\$28	\$0
	chowder	1	\$15	\$15
	Am. Oyster	2	\$110	\$220
	Soft Shelled Clam		\$75	\$0
	Total	3		\$235
Wellfleet	Quahogs (neck)	22915	\$60	\$1,374,900
	cherry	81	\$28	\$2,268
	chowder	86	\$15	\$1,290
	Am. Oyster	4723	\$110	\$519,530
	Soft Shelled Clam	1	\$75	\$75
	Total	27806		\$1,898,063
Yarmouth	Quahogs (neck)	725	\$60	\$43,500
	cherry	18	\$28	\$504
	chowder		\$15	\$0
	Am. Oyster	90	\$110	\$9,900
	Soft Shelled Clam		\$75	\$0
	Total	833		\$53,904
Total				\$4,533,780

Cape Cod Agriculture Labor Force

Cape Cod agriculture contributes a small percentage to the overall job force on Cape Cod. According to Massachusetts Labor and Workforce Development (DETMMA, 2008), there were 8756 establishments employing people in Barnstable County in 2008 (Table 14). Of these, 134 (1.5%) establishments, which employed 324 people in various ways in a given month, fall under the agriculture category. However, this group includes lumberyards and sportsmen stores as well as farms, horse stables, greenhouses, nurseries and aquaculture businesses. The average weekly wage ranged from \$335 per week for a greenhouse worker to \$717 per week for a fruit farmer. A majority of the weekly wages for the agricultural industry falls below the industry average of \$716 per week.

Table 14. Barnstable County agriculture employment and wages statistics.

Industries	Number of Establishments	Average Monthly Employment	Average Weekly Wage
Agriculture, Forestry, Fishing and Hunting	74	144	\$550
Crop Production	17	45	\$464
Fruit and Tree Nut Farming	8	16	\$717
Greenhouse and Nursery Production	7	28	\$335
Animal Production	8	28	\$578
Animal Aquaculture	8	28	\$578
Agriculture & Forestry Support Activity	7	5	\$549
Support Activities for Animal Production	5	30	\$563
Total of all Cape Cod Industries (including the above)	8,756	68,374	\$716
Orleans	62.12	26	87.12
Provincetown	3.26	8	11.26
Sandwich	693.33	0	693.33
Truro	85.29	0	85.29
Wellfleet	2.97	262	235.97
Yarmouth	224.60	27	251.60
Total	4269.27	605	4874.27

IV: APCC Agricultural Survey
A. Creation and Distribution of the APCC Agricultural Survey

APCC distributed a survey to Cape Cod farmers in 2009 based on a template created by the Agricultural Commission in the Town of Rehoboth, Massachusetts. The survey (Appendix 2) contained questions regarding farmers’ agricultural backgrounds, practices, income, concerns, and future plans. Four hundred and thirty four mailing addresses were obtained through public records and these surveys were then distributed with prepaid return envelopes.

B. Results

Of the 434 surveys sent to Cape Cod farmers, 56 responses were received from farmers in the 15 Cape towns. Forty-five of the responses were from people recognized in the APCC Farmland Inventory accounting for 105 parcels recognized as active farmland. Results from the survey broken down by demographics, farm information, and benefits and concerns are presented in the following texts and figures.

Demographics

Of those responding to the survey the vast majority of farmers were between 45 and 74 years of age (Figure 34). Among the respondents, only one was less than 24 years old, none were between the ages of 25 and 34, and four were between the ages of 35 and 44.

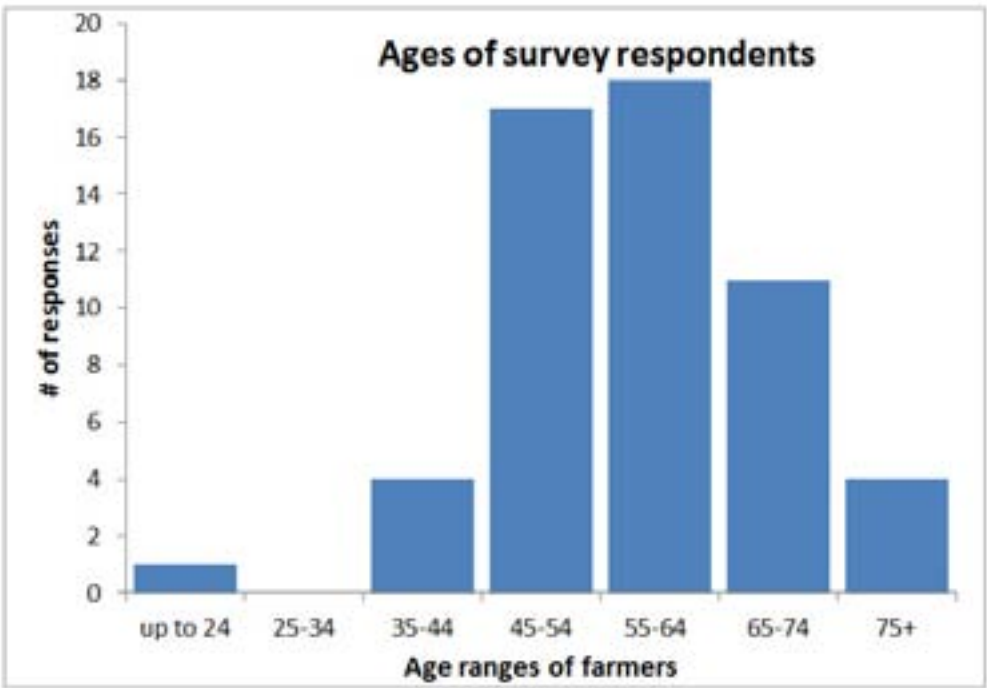


Figure 34. Ages of farmers on Cape Cod.

Most of the survey respondents have been farming for 25 years or more (Figure 35). Eight have been farming for less than five years.

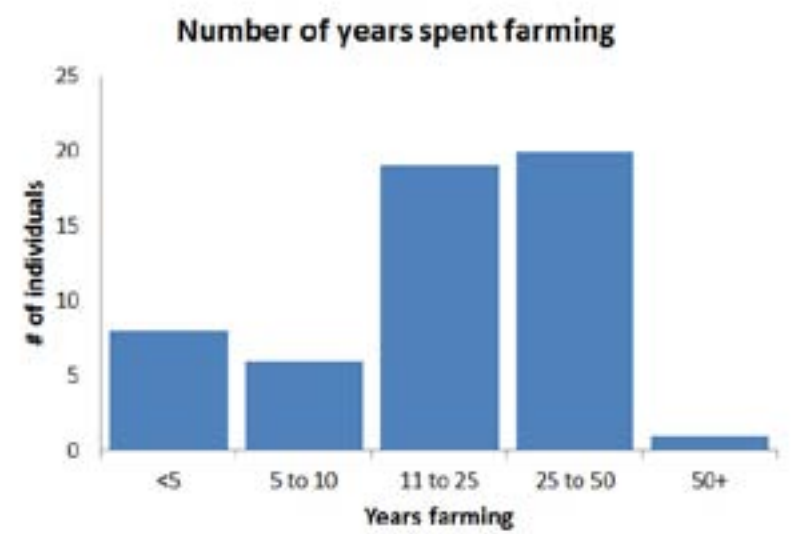


Figure 35. Number of years farming on Cape Cod.

There was a wide range of responses to the question of when a farmer intended to retire. Several farmers responded they had no intention of retiring or did not respond to the question (Figure 36).

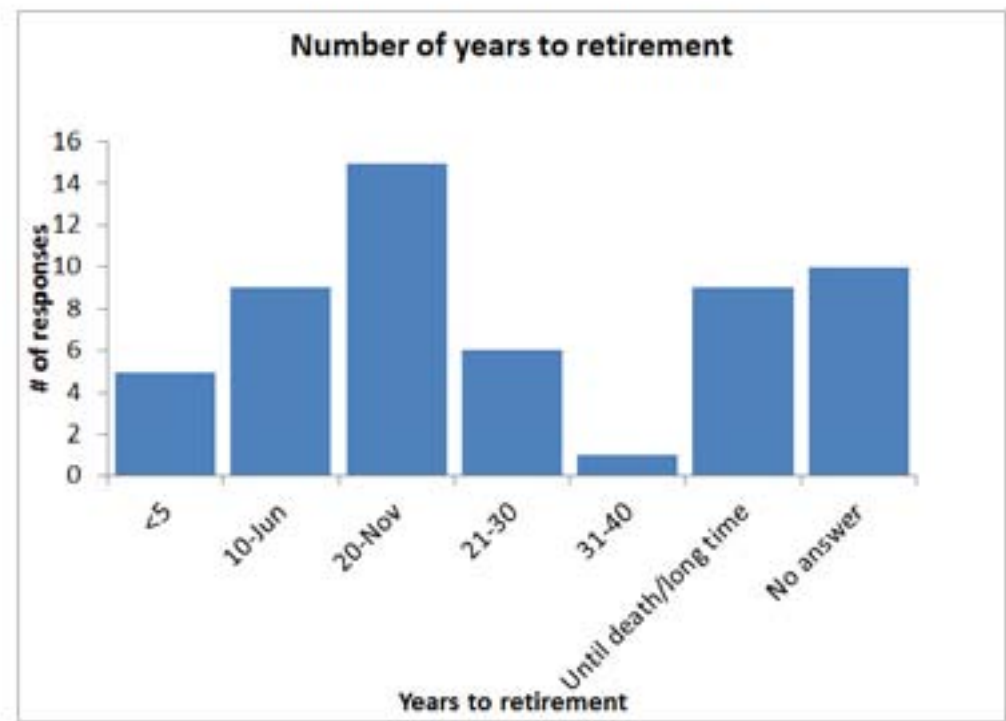


Figure 36. Number of years to retirement.

Property Ownership and Income:

Most of the survey respondents own the land they farm; only four respondents lease land they farm; and seven own some land and lease additional land (Figure 37).

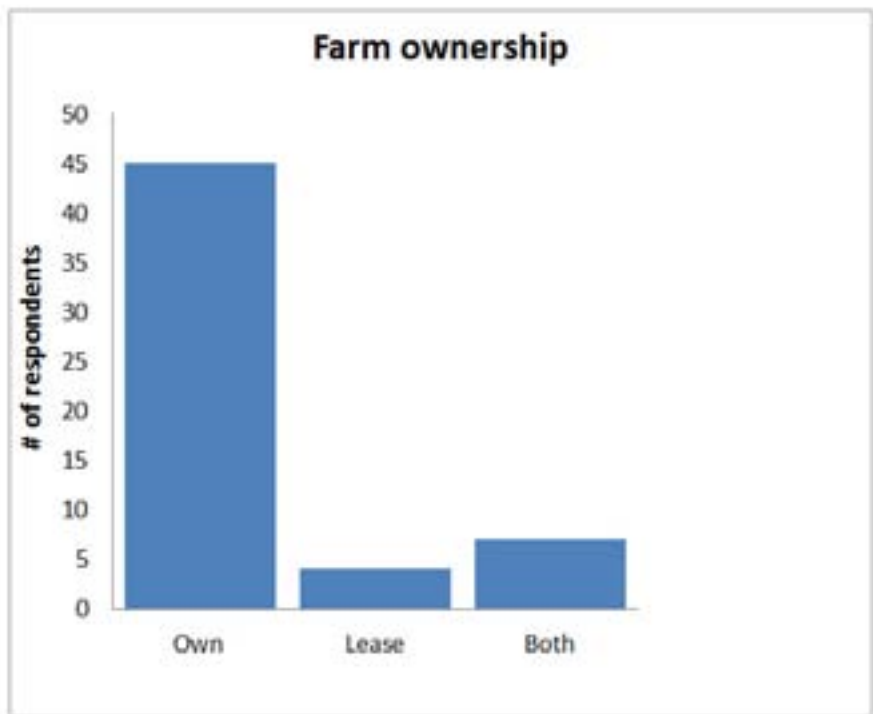


Figure 37. Percent of Cape Cod farmers renting or owning the land farmed.

Of those responding to the survey, 22 reported that farming contributes five percent or less to their income. Ten reported that farming contributed 100% to their income (Figure 38).

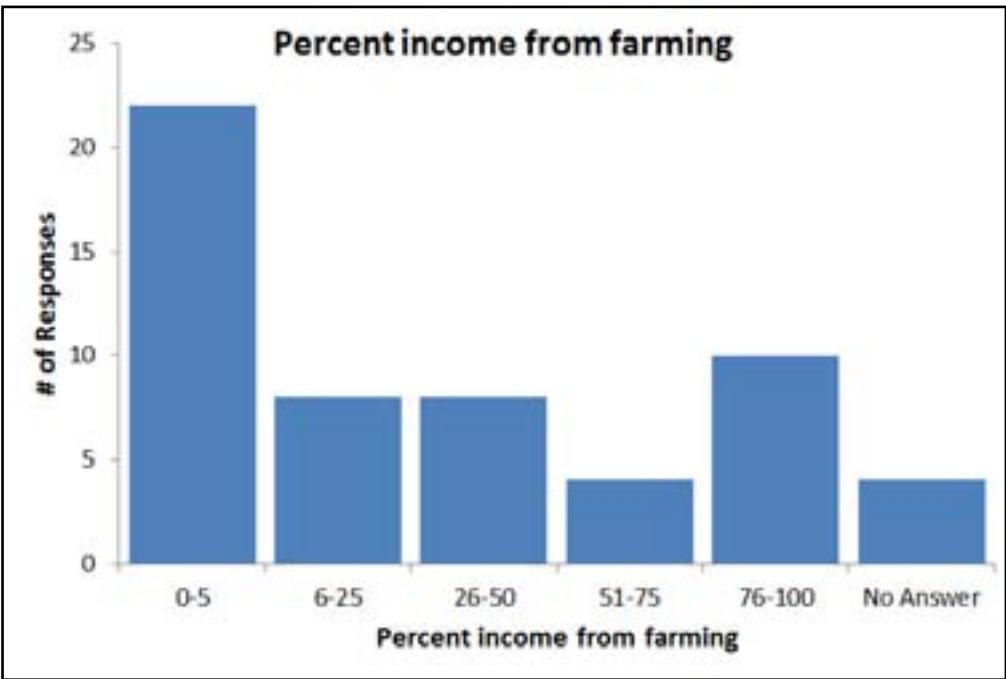


Figure 38. Percent income from farming activities farmed.

When asked about future plans, 34 (60%) respondents did not have someone to take over their farm business upon retirement (Table 15). When asked what the likelihood was that the farmer would be sold, 16 or 29% indicated they would sell the land.

Table 15. Future plans for the farm parcel.

	Has a successor been identified?	Will the land be sold?
Yes	16	16
No	34	33
No Answer	6	7

Benefits and Challenges of Farming on Cape Cod:

When asked to specify the three top benefits of farming on Cape Cod, the most frequent response was the customers (Table 16). The specific environmental benefits listed ranged from improved water quality to wildlife habitat.

Table 16. Recognized benefits to farming Cape Cod by farmers responding to APCC survey.

Benefit	Responses
Good customers	14
Environmental Benefits	13
Location	13
Providing Healthy Food	13
Strong Community	11
Pleasure	8
Climate	7
Tourism	7
Family business	5
Good growing season	5
Income	3
Working with animals	2
Providing Education	2
Lack of competition	1
Agricultural Preservation	1
Growing Interest	1
Resources	1

Along with several benefits came several challenges the respondents faced (Table 17). The cost of running their agricultural business ranked the highest with 20 responses. Costs included land, feed, electricity, and equipment. Also ranking high with 14 responses was the challenge of adhering to government regulations. The regulations most mentioned were land use regulations and public health regulations, with regards to farmers’ markets and manure management.

Table 17. Recognized challenges of farming Cape Cod by farmers responding to APCC survey.

Challenge	Responses
Cost/economic Challenges	20
Government Regulation	14
Market/Production	10
Soil Conditions/ Environmental Concerns	8
Climate/Weather	8
Lack of Resources/ Communication	8
Predation/Pests	7
Property Taxes	7
Labor	3
Development	3
Neighbor Issues	2
Weed Control	2
Lack of Land/ Space	2
Lack of competition	1
Agricultural Preservation	1
Growing Interest	1
Resources	1

Summary of the Survey Responses

The survey provided important information about Cape Cod’s farmers. They are an aging group that most likely will farm into their later years. More than half of the respondents do not have successors to take over their farm business, which raises the question as to what will happen to the agricultural land once the current operator stops farming. Adding to that concern is the fact that 16 respondents said they would most likely need to sell their land.

Farmers also face numerous challenges running their businesses. The cost of farming and government regulations were the highest-ranking challenges and concerns from the respondents.

V. Cape Cod’s Agriculture Community and Affiliations

A. Town Agricultural Commissions

Agricultural commissions are committees of town government that represent the farming community, encourage agricultural growth, promote economic development of local agriculture, and protect farms and farmland. Agricultural Commission members serve as advocates for farmers, farm businesses and farm interests. They aim to resolve nuisance issues and conflicts with farm abutters and other town boards to promote positive visibility for the farming community. Currently, there are 131 Agricultural Commissions in Massachusetts (MASSAGCOMM 2009); six of these commissions represent Barnstable County towns (Falmouth, Barnstable, Yarmouth, Dennis, Harwich and Brewster).

Barnstable Agricultural Commission

The Barnstable Agricultural Commission commented extensively on the 2009 update of the Regional Policy Plan of the Cape Cod Commission, urging the Commission to increase its protection of farming in Barnstable County. The Barnstable Agricultural Commission has also worked with the Town Transfer Station to create a productive composting management plan for Barnstable horse farms. The members have active roles in the Cape and Island Farm Bureau as well.

Brewster Agricultural Commission

The Brewster Agricultural Commission has focused on an emergency preparation program for barns and stables by working with Brewster Police and Fire Departments to train personnel on handling animals in emergency situations. This program also distributed emergency preparedness kits for livestock. The Brewster Agricultural Commission is interested in hosting a Brewster Farm Fest and is researching previous events to evaluate the viability of a festival. The Commission is an active member of the Cape and Island Farm Bureau.

Dennis Agricultural Commission

The Dennis Agricultural Commission has successfully advocated for passage of a right-to-farm bylaw. The group was crucial in advocating that the future of a well-known town parcel, Melpet Farm, include agriculture.

Harwich Agricultural Commission

The Harwich Agricultural Commission is the longest standing agricultural commission in Barnstable County and currently has seven members. The group hosts the highly regarded Harwich Farmfest. Their goals include creating a stable permit application, hosting weekly farmers’ markets, and creating a right-to-farm bylaw.

Falmouth Agricultural Commission

The Falmouth Agricultural Commission has developed a work plan to guide the agricultural commission’s activities and assisted in the successful start of the Falmouth farmers’ market.

Yarmouth Agricultural Commission

The Yarmouth Agricultural Commission has utilized the Community Preservation Act to fund community gardens in the Town. Their goal is to create 50 farms in 10 years. In the short period they have been established, they have written a mission statement and a right-to-farm bylaw.

B. Regional Agricultural Affiliations

There are a variety of other governmental and nongovernmental groups on Cape Cod that promote and sustain local agriculture. These groups provide technical assistance, retail outlets and moral support to farmers.

Cape and Island Farm Bureau

The Cape and Islands Chapter of the Farm Bureau was established over 70 years ago. Their mission is to monitor and protect water resources for agricultural production and consumer use of agricultural products; support farmers’ rights to employ usual and customary agricultural practices; support financial programs that aid in keeping farming a viable livelihood; and support sustainable practices that enhance farming efficiency. The Cape and Island Farm Bureau strongly advocates for the establishment of agricultural commissions and has assisted in the creation of them in some of the Cape Cod towns. They also aid in raising funds for future projects and events to showcase local agriculture.

Cape Cod Cooperative Extension

The Cape Cod Cooperative Extension, the educational division of Barnstable County government, has established a number of horticultural and natural resource-based programs for the county. They host Master Gardener classes, distribute guides on native and non-native plants, encourage and teach environmentally sound planting practices and host various local plant sales.

The Extension has taken leadership of the “Buy Fresh, Buy Local” campaign for Cape Cod. This program works to connect people with Cape Cod-grown farm products, raise awareness about the benefits of buying local, and promotes growers and buyers through the Buy Fresh Buy Local Cape Cod logo and message. The campaign’s focus is based on a community tool kit originated by Food Routes (www.foodroutes.org) aiming to at least create a consistent “brand” of local agricultural products with point of sale and seasonal marketing plans. Twenty-five Cape Cod farms and markets as well as 18 restaurants are members of the Buy Fresh, Buy Local Cape Cod campaign and utilize the marketing materials provided to them.

Barnstable County Beekeepers Association

The Barnstable County Beekeepers Association (BCBA), established 35 years ago, consists of over 300 beekeepers from the Cape Cod area ranging from hobbyists to those managing several hives. The group meets regularly to discuss topics such as hive management, pests and diseases, plants and pollination, and extracting honey. The club provides basic educational courses about beekeeping on Cape Cod as well as various informational sessions about the BCBA at the Barnstable County Fair.

C. National Agricultural Programs

Natural Resources Conservation Service

The United States Department of Agriculture’s Natural Resources Conservation Service (NRCS) is the primary federal agency that works with private landowners to help them conserve, maintain and improve their natural resources. They assist farmers in finding sustainable methods of farming while maintaining the natural habitats found on farm property. The agency emphasizes science-based conservation, technical assistance, partnerships, incentive-based programs; and cooperative problem solving at the community level. NRCS Conservation programs include:

- conservation technical assistance programs
- environmental improvement programs
- stewardship programs
- water resource programs
- easement programs
- technical planning tools and resources
- resource inventory and assessment
- assistance with compliance, appeals, mediation, and relief
- incentive programs

Farm Service Agency

The United States Department of Agriculture’s Farm Service Agency (FSA) implements agricultural policy, provides credit and loan programs, and manages technical assistance programs through a national network of federal, state and county offices. These programs are designed to improve the economic stability of the agricultural industry and to help farmers adjust production to meet demand. The Pilgrim Resource Conservation & Development Area Council, Inc. headquartered in Wareham, MA is the home base for the regional FSA office.

National Agricultural Statistics Service

The United States Department of Agriculture’s National Agricultural Statistics Service serves the basic agricultural and rural data needs of the country by providing statistical information and services to farmers, ranchers, agribusinesses and public officials. These data are vital to monitoring the ever-changing agricultural sector and carrying out farm policy. The most recent census was through 2007.

D. Outlets for Farmers to Market their Goods on Cape Cod

Most farms in Barnstable County have minimal acreage and concentrate on producing specialized products to sell to consumers. The need to market these goods and services has been met by the agricultural community through various options allow that farmers to showcase their products on Cape Cod.

Farmers’ Markets

A farmers’ market is a gathering of growers and artisans who market and sell their products directly to the consumer in a community setting. The produce and goods found at farmers’ markets are typically produced locally, providing the community the opportunity to purchase ripe, healthy foods while reducing the amount of energy (shipping and packaging) required by food transported to major grocery stores. Shopping at the farmers’ market benefits the local farmer by creating an opportunity for income while strengthening the local community through support of local businesses. The number of Cape Cod farmers’ markets is growing and changing. The list below has information about some of the markets.

Bass River Farmers’ Market- www.bassriverfarmmarket.com
Thursdays, 8:30 AM to 1:30 PM
5/26- Fall
307 Old Main Street, Yarmouth

Centerville/Marstons Mills Farmers’ Market
Mondays, 2PM to 4PM
6/14-10/1
Fraternal (Masonic Lodge), 1987 Falmouth Road (Route 28)

Dennis Community Farmers’ Market
Sundays, 11AM to 4 PM
6/12- Fall
645 Route 28, Dennisport

Falmouth Farmers’ Market – www.falmouthfarmersmarket.org
Thursdays, 12PM to 6PM
5/26-Fall
Peg Noonan Park, Main Street (Next to the Public Library), Falmouth

Harwich-Brewster Farmers’ Market- www.harwichhistoricalsociety.org
Thursdays, 3PM to 6PM
6/16-10/13
Brooks Academy Museum, 80 Parallel Street, Harwich

Mid-Cape Farmers’ Market (Hyannis) – www.midcapefarmersmarket.com
Wednesdays, 2PM to 6PM
6/8-10/26
Barnstable Youth and Community Center, 141 Bassett Lane, Hyannis

Orleans Farmers’ Market – www.orleansfarmersmarket.com
Saturdays, 8 AM to 12 PM
5/14-11/19
21 Old Colony Road, Orleans

Osterville Farmers’ Market – www.ostervillefarmersmarket.org
Fridays, 9 AM to 1 PM
6/3-9/30
Osterville Historical Society, 155 West Bay Road, Osterville

Provincetown Farmers’ Market
Saturdays, 11 AM to 4 PM
May - December
Intersection of Ryder Street and Commercial, Provincetown

Sandwich Farmers’ Market- www.sandwichfarmersmarket.com
Tuesdays, 9 AM to 1 PM
6/7-10/25
164 Route 6A, Sandwich

Sandwich Farmers’ Market Oak Crest- www.thesandwichbazaar.com
Wednesdays, 8 AM to 1 PM, 4/27-10/26
Saturdays, 8 AM to 1 PM, 6/25-10/15
34 Quaker Meetinghouse Road, Sandwich

Waquoit Farmers’ Market- www.waquoitucc.org
Saturdays, 11 AM to 3 PM
March-5/28
Waquoit Congregational Church, Route 28, Falmouth

Southeastern Massachusetts Agricultural Partnership (SEMAP)
SEMAP is a nonprofit organization whose mission is to help agricultural enterprises in southeastern Massachusetts achieve economic success. SEMAP offers programs for agricultural business planning, agricultural business management, budgeting and record keeping, and diversification and marketing strategies for local farmers. SEMAP also promotes local farm products to the public, connects farms directly with businesses, and works to promote new farm establishments. Their main outlet is an online searchable directory of local growers and producers by town, product, and availability (www.farmfresh.org/food/farms). SEMAP has helped in the establishment of the Buy Fresh, Buy Local Cape Cod campaign, which is currently managed by the Cape Cod Cooperative Extension, a program of Barnstable County.

Community Supported Agriculture (CSAs)

A CSA consists of individuals purchasing shares of crop yields from a farm operation in which the growers and consumers share the risks and benefits of food production. By establishing a CSA, a farmer receives funds that help pay for the upfront costs of a growing season. By joining a CSA, individuals are assured of receiving local and fresh foods. CSAs usually have a system of weekly delivery or pick-up of vegetables and fruits and sometimes of dairy products and meat. Table 18 identifies Cape Cod farms offering CSAs’.

Cape Cod farms offering CSA memberships
Cape Cod Organic Farm
Barnstable, MA
Hawk’s Wing Farm
Yarmouth, MA
Tuckernuck Farm
West Dennis, MA
Eldredge Farm
Brewster, MA
Bay End Farm
Bourne, MA
Coonamesett Farm
Falmouth, MA
Miss Scarlett’s Blue Ribbon Farm
Yarmouthport, MA
Cedar Spring Herb Farm
Harwich, MA
Surrey Farms
Brewster, MA

Table 18. Cape Cod farms offering CSA memberships and their products.

Edible Cape Cod

Created in 2002, EDIBLE COMMUNITIES, INC. establishes regional magazine publications throughout the country showcasing locally produced foods, services, and the people that produce them. Edible Communities’ mission is to connect people with the farmers who produce their food on a daily basis. “Edible Cape Cod,” the Cape Cod version of this national publication, highlights the farmers and artisans in Barnstable County and entices people to eat more locally-grown and locally-produced Cape Cod food items. “Edible Cape Cod” is a quarterly magazine that focuses on seasonal themes. Edible Cape Cod also hosts the annual Cape Land and Sea Harvest event that occurs each autumn.

Annual Farm and Harvest Events

Generally, farm and harvest festivals are annual celebrations that emphasize the end or beginning of a crop growing season and typically feature local historical farming practices, such as cranberry harvesting. There are several annual events that occur on Cape Cod that illustrates the agricultural heritage of the region. Activities range from farming demonstration days to special farmers’ markets to community meal events. Some of these events include:

- Cape Land and Sea Harvest (CLASH), an annual three-day event highlighting local farming and food. (www.capecodclash.org)
- Harwich FarmFest, an annual weeklong event with farm tours and a special farmers’ market. (www.harwichcc.com/event-farm-fest)
- Barnstable County Fair, an annual two-week agricultural fair. (www.barnstablecountyfair.org)
- Falmouth Cranberry Harvest and Farm Festival, an annual event showcasing cranberry harvesting. (www.falmouthfarms.org/cranberryharvestfarmfestival)
- Wellfleet Oyster Fest, an annual two-day event highlighting the Wellfleet oyster industry. (www.wellfleettoysterfest.org)
- Cranberry Harvest Celebration, an annual two-day event hosted by the Cape Cod Cranberry Growers Association. (www.cranberryharvest.org)

VI. Agricultural Land Protection Programs

Farmland protection programs have been widely used to provide incentives to land owners to retain property in agriculture and to stimulate the local economy. These tools range from permanent restrictions to annual tax incentives that ensure the land is meeting its agricultural potential.

A. Federal Programs

Federal Agricultural Environmental Enhancement Program

This federal program offers assistance to prevent and mitigate impacts to natural resources that could be or have been incurred from agricultural practices. The property must consist of at least five contiguous acres of land under the same ownership where at least three acres are in cranberry bog production or have at least 5,000 square feet under greenhouse production. Farmers selected to participate are reimbursed for the approved costs of materials up to \$30,000, which are used to install best management practices to improve water quality, conserve water or reduce greenhouse gas emissions. Owners are required to meet with the USDA Natural Resources Conservation Service to devise a farm plan and to apply for the program through the Massachusetts Department of Agriculture.

Federal Environmental Quality Incentive Program

This federal program offers financial and technical assistance to improve agricultural land management practices in order to protect the surrounding natural resources. Eligible land is determined by the USDA Natural Resources Conservation Service. The applicant must own the land, it must be in active agricultural use and produce or sell a minimum of \$1,000 in agricultural products. Amount of acres, degree of threatened land, and number of environmental objectives affect the decision regarding the application.

B. State Programs

Massachusetts General Laws Chapter 61A

Massachusetts General Laws Chapter 61A was created to promote active agricultural and horticultural land use. This local differential assessment classification provides large local tax benefits to property owners looking to make a long-term commitment to farming. The property must be at least five acres of contiguous land actively devoted to farming and must have been farmed for two consecutive years prior to submitting an application. The minimum gross sales for the first five acres must be at least \$500, and \$5 for each additional acre. In return, the land owner receives the monetary tax difference between the best use value of the land and the agricultural value, and this then temporarily takes the land out of development. The owner must apply for this classification annually. If the owner decides to sell the land, the town receives first right of refusal to purchase the property, which can be placed under the jurisdiction of a town commission or appropriate non-profit.

Massachusetts Conservation Restriction with Agricultural Provisions

This permanent authorized state-based restriction regulates the use of the land to protect specified conservation values while still allowing agriculture as a permitted use. There is no minimum acreage requirement and applicability is based on overall value of resources on the property. A land owner(s) approaches a local land trust or conservation commission to begin the process of placing this deed restriction on the land. After the restriction is enacted, the property owner(s) receives a greater federal income tax deduction. This option removes the threat of development of active agricultural land while reducing the value for future farming ventures.

Massachusetts Agricultural Preservation Restriction (APR) Program

The Massachusetts Agricultural Preservation Restriction (APR) Program was created to preserve and to protect agricultural land, especially the finite designated prime agricultural soil lands by providing a non-development alternative to owners of “prime” and “state important” agricultural land. As of 2010 the APR program includes almost 800 farms and a land area greater than 66,000 acres.

Persons who are interested in this program must contact the State of Massachusetts Department of Agriculture for an application and meet with the USDA Natural Resources Conservation Service to complete a site evaluation and farm plan. To be considered, the farm must be at least five acres in size, be actively devoted to agriculture for the two preceding tax years, and gross at least \$500 in sales per year plus \$5.00 for each additional acre or \$0.50 for each additional acre of woodland and/or wetland. Other factors affecting acceptance into the program include: suitability and productivity of the land for agricultural use based on soil classification, physical features, location; threat to the continuation of agriculture on the land due to circumstances such as owner’s death, retirement, financial difficulties, development pressure, or insecurity due to rental agreements; the degree to which the land is of a size or composition to be economically viable for agricultural purposes and the likelihood that it will remain in agriculture for the foreseeable future. When the restriction is placed on the property, the land owner receives a cash payout equaling the difference between the “fair market value” and the “agricultural value” of the property. This money can then be used to stimulate the local economy by improvements made to the farm or giving the ability to clear up farming debts owed.

Section IX of this document overviews the efficacy of the state APR program for Cape Cod farms.

Massachusetts Farm Viability Enhancement Program

The state managed Farm Viability program offers assistance to farmers to “modernize” their farms through business planning. The parcel must be a minimum of five acres of suitable and productive land, based on soil classification, physical features, and location. Threats to the continuation of farming on the land due to financial issues as well as the amount of experience that the farmer has also factor into acceptance into this program. The goal of this program is to make farming more economically viable for Massachusetts’ farmers and to hold participating farmers to a higher standard when incorporating environmental protection into their farming plan.

C. Other Programs and Agencies involved in Farmland Protection in Massachusetts

Regional Level

The Cape Cod Commission is a regional land use planning and regulatory agency. The Regional Policy Plan (RPP) contains both planning goals and policies for the region and a regulatory framework for evaluating Developments of Regional Impact. The need to protect farmland is addressed in three sections of the plan: land use, open space and heritage preservation and community character. In the most recent update to the plan in 2009, input from the local agriculture community resulted in some enhanced language when compared to previous plans. As the planning goals of the RPP are often linked to regulatory actions, further discussion of the RPP can be found in the following section of this document.

Land Banks

When Nantucket residents voted in favor of a land bank and the Massachusetts legislature subsequently passed special legislation in 1983, the island became the first place in the country to establish a land bank. Martha’s Vineyard followed suit in 1985. In both cases, the pursuit of a land bank came in response to spiraling real estate activity. On the islands a 2% tax on most real estate transfers provided the income for land bank purchases. On Cape Cod, it was not until 1998 that a land bank was established to help protect open space. Like the islands, Cape Cod had witnessed a rapid increase in the pace of development over the past 20 years. Cape Cod’s land bank was funded by a 3% charge on property taxes and a \$15 million dollar match from the state. Over the years, these land banks, often working with local land trusts, have protected thousands of acres of land from development.

Language in the land bank legislation clearly articulates the resources that the residents of Nantucket, Martha’s Vineyard and Cape Cod sought to protect.

The Nantucket land bank legislation identified “...ocean, harbor and pond frontage...barrier beaches...marshes, estuaries and adjoining uplands, heathlands and moors, land providing access to ocean, harbor and pond frontage and land for bicycle paths...land for future public recreational facilities and use...recreation land to protect existing and future wellfields and aquifer recharge areas; and...land used or to be used for agricultural purposes.”

The Martha’s Vineyard land bank legislation identified “... land to protect existing and future well fields, aquifers and recharge areas; (b) agricultural lands; (c) forest land; (d) fresh and salt water marshes and other wetlands; (e) ocean and pond frontage, beaches, dunes and adjoining backlands, to protect their natural and scenic resources; (f) land to protect scenic vistas; (g) land for nature or wildlife preserves; (h) easements for trails and for publicly owned lands; and (i) land for passive recreational use.

The Cape Cod land bank stated that “Any real property interest in open space purchased with land bank funds shall be retained in natural, scenic, or open condition ...Real property interests may consist of any of the following: (a) land to protect existing and future well fields, aquifers and recharge areas; (b) agricultural lands; (c) forest land; (d) fresh and salt water marshes and other wetlands; (e) ocean and pond frontage, beaches, dunes and other coastal lands; (f) land to protect scenic vistas; (g) land for natural or wildlife preserve; (h) land and easements for trails; and (i) land for recreational use.

Preservation of agricultural land was identified in the legislation of each land bank as an important resource to be protected and some active farms have been protected with these funds. Notably Martha’s Vineyard protected numerous agricultural parcels from development through acquisition and the use of conservation restrictions.

Local land trusts have also played a role in preservation of farms in Massachusetts. The American Farmland Trust conducted surveys of Massachusetts land trusts and Massachusetts Farm Bureau members in 2009 to gain feedback on the efficacy of the APR program. The land trusts’ survey revealed that land trusts had been very involved (via pre-acquisition or significant fundraising) in almost 90 APR projects that resulted in protection of more than 10,000 acres of land.

VII. Regulatory Agricultural Planning Tools

A. Agriculture Protection Zoning

The act of zoning was established in the 1920s as a means of designating specific uses to areas of land based on its characteristics, location, and accessibility. Agriculture Protection Zoning (APZ) is a form of very large lot zoning applied in areas in which a town or county has determined that agriculture is the preferred land use. Lands zoned for agricultural land use are typically those with prime soils, an historic record of farming, and where farming is the desired use (AFT 1997). Protecting agricultural lands through zoning was first pioneered in the mid-1970s by counties in Pennsylvania, California and Washington to protect important farmland from the threat of development. A 1995 study by the American Farmland Trust reported that about 700 local governments in 24 states had enacted some form of Agricultural Protection Zoning.

There is a wide range of development densities permitted in agriculture protection zones. In western states, densities can be as low as one house per 640 acres. Agricultural zoning in eastern states features smaller parcel sizes. For example, in Baltimore County, Maryland, one dwelling per 50 acres is the allowed density in the Resource Conservation District. In some Pennsylvania counties and townships the permitted density of non-farm dwellings ranges 20 – 25 acres. Harrison Township in Ohio has 20-acre minimum lot sizes.

In some areas, the term agricultural zoning is used where one house/acre or one house/two acres is permitted. (As will be described below, the town of Falmouth has such zoning designations.) The American Farmland Trust points out (AFT 1998) that although such zoning does permit farming, the function of this kind of zoning is more to reduce the density of development as such small parcels limit the amount of farm activity that can take place.

Agricultural Protection Zoning is a very important component of a community’s plan to retain agriculture. Because zoning ordinances are subject to change, zoning cannot be relied upon as the only method to protect farms. As discussed later in this section, Massachusetts, including Cape Cod, has not utilized agriculture zoning in any reasonable way to protect agriculture, in contrast to many other parts of the country where agricultural zoning is common.

B. Massachusetts Zoning Act

The Commonwealth of Massachusetts acknowledges the necessity for agriculture in the state Zoning Act, MGL Chapter 40A: Section 3. This section of the zoning act provides a conditional exemption for agriculture by providing that zoning ordinances and bylaws may not unreasonably prohibit or regulate land that has a primary purpose of commercial agriculture. Prior to August of 2010, the exemption was limited to land located within districts zoned for agriculture and to land of five acres in area or more. The Zoning Act was amended in August 2010 by adding an additional category of agricultural uses protected by that statute of any parcel of 2 acres or more that generates annual revenues from the sale of products of \$1,000 or more per acre. Thus, there are now three categories that exempt agricultural land from local zoning:

1. Parcels of land of any size devoted primarily to commercial agriculture within districts zoned for agriculture. There is no minimum revenue requirement.
2. Parcels of land of five acres or more devoted primarily to commercial agriculture within any zoning district. There is no minimum revenue requirement.
3. Parcels of land of 2 acres or more if the sale of products from the agricultural use generates \$1,000 per acre or more of gross sales.

The amended text of the Zoning Act appears in bold below.

“No zoning ordinance or by-law shall regulate or restrict the use of materials, or methods of construction of structures regulated by the state building code, nor shall any such ordinance or by-law prohibit, unreasonably regulate, or require a special permit for the use of land for the primary purpose of commercial agriculture, aquaculture, silviculture, horticulture, floriculture or viticulture, nor prohibit, unreasonably regulate or require a special permit for the use, expansion, reconstruction or construction of structures thereon for the primary purpose of commercial agriculture, aquaculture, silviculture, horticulture, floriculture or viticulture, including those facilities for the sale of produce, wine and dairy products, . . ., 25 per cent of such products for sale, based on either gross sales dollars or volume, have been produced by the owner or lessee of the land on which the facility is located, or at least 25 per cent of such products for sale, based on either gross annual sales or annual volume, have been produced by the owner or lessee of the land on which the facility is located and at least an additional 50 per cent of such products for sale, based upon either gross annual sales or annual volume, have been produced in Massachusetts on land other than that on which the facility is located, used for the primary purpose of commercial agriculture, aquaculture, silviculture, horticulture, floriculture or viticulture, whether by the owner or lessee of the land on which the facility is located or by another, except that all such activities may be limited to parcels of 5 acres or more **or to parcels 2 acres or more if the sale of products produced from the agriculture, aquaculture, silviculture, horticulture, floriculture or viticulture use on the parcel annually generates at least \$1,000 per acre based on gross sales dollars** in area not zoned for agriculture, aquaculture, silviculture, horticulture, floriculture or viticulture. For such purposes, land divided by a public or private way or a waterway shall be construed as 1 parcel. . . For the purposes of this section, the term “agriculture” shall be as defined in section 1A of chapter 128, and the term horticulture shall include the growing and keeping of nursery stock and the sale thereof. Said nursery stock shall be considered to be produced by the owner or lessee of the land if it is nourished, maintained and managed while on the premises.”

Agriculture Protection Zoning and the State Zoning Act

As described above, Agriculture Protection Zoning (APZ) is a form of very large lot zoning applied in areas in which a town has determined that agriculture is the preferred land use. Despite the language in the Massachusetts State Zoning Act that clearly supports agriculture as an important land use, Massachusetts does not have legislation that directly enables Agricultural Protection Zoning (APZ). By contrast, other states expressly authorize localities to use agricultural zoning.

Because the state Zoning Act is silent on this issue, it may be permitted under the Home Rule Amendment, but case law has not in general supported large lot zoning. In fact, all across Massachusetts, there are only a very few places—including Edgartown and a few towns in the Cape Cod National Seashore—where even 3-acre zoning has been permitted by the Commonwealth absent demonstration of an overriding public interest. Typical lot sizes in Massachusetts’ towns range ½ to perhaps two acres.

It would appear that in Massachusetts, the only method that has been available to protect agricultural lands—or any other resource land for that matter—has been through acquisition of the land, through conservation or agricultural restrictions, or through state incentive programs.. However, recent low-density zoning bylaws that passed in Shutesbury, Brewster, New Salem and Wendell may suggest that such large lot or low-density zoning may now be allowed. This important breakthrough is discussed in the next section.

C. Zoning to Protect Natural Resources

Cluster/Open Space Residential Design Zoning

For many years, cluster zoning has been promoted as an alternative to a traditional grid subdivision layout. Clustering development on smaller lots is more economical for the developer and more beneficial to the environment as it results in a larger portion of the parcel remaining as open space. A variant of cluster zoning is Open Space Residential Design (OSRD) wherein attention focuses on natural resource protection and there is no minimum lot size. All Cape Cod towns now have some form of cluster or OSRD bylaw, but they are not widely or consistently used and typically only protect narrow fingers of land rather than larger areas. Skeptics claim these bylaws are of little use as the Cape is almost fully developed. Nevertheless, there may be opportunities for some agriculture in cluster or OSRD areas.

In the past many believed that clustered developments were less marketable than traditional grid subdivisions. However, recent studies indicate that proximity to views of open space more than compensates for the smaller lots found in cluster developments (Lacy).

Natural Resource Protection Zoning

A few Massachusetts towns have modified the concept of OSRD by considering development densities rather than lot sizes. Known as Natural Resource Protection Zoning (NRPZ), this kind of zoning can protect agricultural lands as well as drinking water supplies, sensitive watersheds, and critical habitats. The highest priority in a NRPD bylaw is resource protection; as a result, both development potential and the pattern of subdivision are altered.

The town of Shutesbury was the first to adopt NRPZ in order to protect the town’s forestry resources in 2008. The town of Brewster followed in 2009 when it passed a zoning bylaw to create a NRPZ district to protect the public water supply and water quality in Pleasant Bay. New Salem and Wendell have recently adopted NRPZ bylaws and Harwich has a draft NRPZ bylaw.

These bylaws first set aside those parts of the parcel that contain the resources the bylaw seeks to protect—forestry in the case of Shutesbury and water in the case of Brewster—and then cluster development on the remaining land. All four bylaws require 65 – 80% of the parcel to be set aside.

Unlike traditional cluster bylaws that allow cluster development by special permit only, the NRPZ bylaw makes clustering “by right” and requires a special permit for a conventional grid subdivision. The number of dwelling units is calculated using a density formula instead of the typical large-lot subdivision layout. Both Shutesbury and Brewster have two different districts covered by the NRPZ. Depending on the district, densities are three or five acres per unit, but this density is averaged over the entire district so individual house lots are much smaller. Lot sizes and road frontage requirements are flexible (i.e. there are no minimums) and shared driveways are encouraged to limit paved surfaces.

Development Density can be increased in an NRPZ subdivision through an incentives system. Brewster’s incentive system is linked to the purpose of the district, the protection of water resources. In the Brewster NRPZ district extra units are allowed if additional water resource protection measures, such as connecting all the houses to an advanced wastewater treatment system, utilizing low impact development concepts to reduce stormwater runoff, and other techniques are put in place.

D. Cape Cod Commission Regional Policy Plan

The 2009 update to the Cape Cod Regional Policy Plan added some new language to the land use goal (LU3.3): “to preserve and enhance rural land uses, including agriculture, that are environmentally compatible with the Cape’s natural resources in order to maintain opportunities to enjoy the traditional occupations, economic diversity, and scenic resources associated with rural lands,” was amended to end with the phrase “and to support activities that achieve greater food independence for Cape Cod.”

The update did not strengthen the minimum performance standards associated with this goal. These remain:

Land Use 3.1. New development adjacent to rural landscapes and those lands in active agricultural production shall maintain or provide a thickly vegetated buffer of sufficient width to prevent conflicts between the development and existing uses.

Land Use 3.2 Development unrelated to agricultural operations shall be designed so as to avoid or minimize development on lands capable of sustained agricultural production as evidenced by soils, recent agricultural use, and/or surrounding agricultural use.

In the section on Cape Cod Commission actions to implement goals, the RPP indicates the Commission will work with other parties to “encourage and support continued and expanded agricultural use of land on Cape Cod, where environmentally appropriate.” A second action the Commission says it will undertake is an investigation of the use of Districts of Critical Planning Concern, Transfer of Development Rights and conservation restrictions in order to protect significant soils and working agricultural landscapes.

Recommended town actions to reach this goal include: exploration of expanding agricultural activities on municipal lands where appropriate; adoption of cluster bylaws allowable by right and agricultural zoning; direction of additional growth away from identified Resource Protection Areas; and adoption of Right-To Farm bylaws.

Agriculture is also addressed in the Open Space section of the updated RPP. The Open Space Protection and Recreation Goal (OS1): is “To preserve and enhance the availability of open space that provides wildlife habitat and recreational opportunities, and protects the region’s natural resources and character, Barnstable County shall strive to protect remaining developable land.” The minimum performance standard OS1.3 includes a paragraph on farmland protection: “In the design of developments, and in the consideration of on-site or off-site open space, agricultural soils and agricultural uses shall be protected. In suitable locations and where conflicts with sensitive habitats and/or state law do not arise, conservation restrictions may reserve the right to farm.”

Finally agriculture is addressed in the Heritage Preservation and Community Character: Historic, Cultural, and Archaeological Resources section of the RPP. In the planning section, a Cape Cod Commission action that is listed is “to inventory the region’s distinctive cultural landscapes, including historic agricultural lands, and ...make recommendations to preserve these significant resources through land protection, preservation or conservation restrictions, educational efforts to increase public awareness, and other means.” Minimum performance standard HPCC1.2: Cultural Landscapes states “the distinguishing original features of an historic or cultural landscape shall be preserved. New development adjacent to or within historic or cultural landscapes shall be located to retain the distinctive qualities of such landscapes and shall be designed to maintain the general scale and character-defining features of such landscapes. In particular, historic agricultural lands and other working agricultural lands shall be retained to prevent further loss of these dwindling resources that speak to the Cape’s agricultural past.”

E. Right-to-Farm Bylaw

A Right-to-Farm bylaw is a general, as opposed to zoning bylaw, which is designed to underscore the importance of farming to a town. Such a bylaw acknowledges that farming, and its associated sights, sounds and odors is a legal, accepted and desirable use of land that is of value for cultural and economic reasons. For towns that have Agricultural Commissions, there is a dispute resolution process. It is strongly recommended that Agricultural Commissions are adopted before enacting a Right-to-Farm bylaw, as such a commission can help tailor the bylaw and educate the public about the need for such a provision.

F. Local Zoning and Agriculture

Permitted and Prohibited Agricultural Uses in Zoning Bylaws

As described earlier in this document, the state zoning act exempts agriculture from zoning restrictions on lots that are five acres or greater in size or on lots of two acres or more with annual revenues of \$1,000 or more per acre. Zoning regulations in Cape towns address several different aspects of agriculture, including minimum lot sizes, districts in which agriculture is allowed or not, stables, raising of livestock and farm stands.

The town of Falmouth is the only town that has zoned agricultural districts where agriculture, horticulture, and floriculture are permitted uses along with single-family homes, and other community services. The three agriculturally zoned districts have lot size minimums of 40,000, 60,000 and 80,000 square feet. These districts were designated in 1973 and were based on the historical record of cropland in these areas.

In most towns the raising of crops is allowed by right in most or all zoning districts on parcels less than five acres. A few towns require a special permit for lots smaller than five acres. Most towns on Cape Cod require a special permit for raising of livestock, sometimes with different requirements for swine, fur-bearing animals and poultry. Several towns restrict the raising of livestock to certain zoning districts.

Regulations for permitting farm stands include specifications concerning allowable uses in different zoning districts, the size of the parcel, and percent of goods produced on the land on which the farm stand is located. In some towns, farm stands are a permitted use in all but a few zoning districts. Some towns allow farms stands by special permit if the parcel is less than five acres. Some towns require that a percentage or all of the product sold is grown on the adjacent land.

Provisions for Agriculture in Other Parts of the Zoning Bylaw

All Cape towns now have cluster bylaws. Most of these explicitly include agriculture as a permitted use in the open space portion of the parcel.

Most Cape towns also have provisions for agriculture in areas of low flood damage potential where structures are not permitted and where agriculture land use is otherwise permitted and does not obstruct flood flow.

Examples of Agricultural Zoning in Other Parts of Massachusetts

The town of Chilmark has established Agricultural Zoned Residential Districts where farming is a permitted use in the area.

The town of Plymouth has established Traditional Rural Village development areas, which consist of different historical mixed uses in which agriculture is included.

Amherst created the Farmland Conservation Overlay District, which is an innovative zoning tool requiring that any development within the district be clustered, thereby preserving the most important agricultural soils for farming.

The town of Hadley has a Farmland Preservation Bylaw that created a farmland preservation district as a sending zone under the Transfer of Development Rights program. The bylaw allows increased density of commercial or industrial development when land in the sending zone is permanently protected.

Hatfield, Massachusetts has a TDR program where all agricultural, outlying residential or rural residential zoning districts are eligible sending areas. Developers pay to permanently protect land in those zones in exchange for increased building density.

VIII. Benefits of Locally Grown Foods

Small farms provide local communities the benefit of scenic and healthy landscapes while contributing to local economic growth. Besides creating picturesque vistas, local agriculture influences all residents. Whether providing open space or healthy vegetables, there are several benefits from supporting local farmers and agricultural landscapes.

A. Nutritional Benefits of Locally Grown Food

The health benefits of consuming fresh fruits and vegetables are numerous. Having a diet high in these food items offer advantages ranging from a decreased risk of cardiovascular disease to the prevention of several types of cancer (CDC 2009). Produce harvested at peak ripeness contains the highest concentration of nutrients; however in the United States most fruits and vegetables are picked before their prime and then are transported long distances to major markets. Produce may appear to ripen during transport, but there is no gain in nutritional value, because nutrients come from the stem and other parts of the growing plant. Sturdiness, uniformity of size and durability for transporting long distances, as opposed to nutritional value, are among the most desirable traits industrial-scale farmers seek in selecting plant stock.

Because a harvested plant loses its vitamin and nutrient content over time, minimizing the distance between farm and the table reduces the loss of nutrients. Produce from farm stands that sell only locally grown foods may have been gathered within a matter of hours, unlike the conventional supermarket produce which is often days to weeks old.

Another human health benefit of locally grown food is the potential of consuming fewer chemicals because small farms tend to be less aggressive when applying fertilizers, pesticides, and herbicides than large farms. Minimizing the risk of food-borne illness that can stem from factory farm practices is another potential benefit of eating locally grown foods.

B. Environmental Benefits of Locally Grown Food

Industrial-scale agriculture has become the primary source of fruits, vegetables, and meat products in the United States. These farms, operating much like factories, use vast quantities of pesticides, herbicides, synthetic fertilizers, water and fossil fuels. The irrigation systems that support such agricultural practices often use more water than is recharged, while introducing toxic chemicals into the environment where they may affect drinking water and natural habitats at distances far removed from where they were injected. For example, nitrogen in artificial fertilizers travels down rivers into coastal areas causing algae blooms and damaging coastal fisheries. Because of these serious environmental impacts, industrial agriculture has become a major cause of the degradation of many habitats. It has also been the driving force of the recent local food movement, which focuses on promoting locally grown foods and small-scale farming methods (UCS 2008).

Many smaller farms grow and rotate a large variety of different crops, unlike most very large farms that specialize in monocultures such as growing just corn or soybeans. By interchanging crops, crucial nutrients in soil can be replenished by the different plants during the growing season and during dormant periods. This creates fertile soils that stabilize land reducing erosion and flooding while providing recharge areas for ground water. Many small-scale farms practice organic gardening techniques, whether or not they are certified as an organic farm.

Buying locally grown food may also reduce the amount of non-renewable energy that is required to transport industrial grown fruits and vegetables to market. The Leopold Center for Sustainable Agriculture in California reports that the average fresh food item travels 1,500 miles to get to its final

destination. The further the distance, the higher the amount of energy required to bring the food to the consumer. Purchasing local produce from a farmers’ market or roadside stand not only protects important resource areas, but reduces the consumption of important global resources.

IX. Impediments to Farming and Recommendations for Improved Policies

The historical tradition of Cape Cod is one of farming and fishing. However, rapid population growth coupled to a sprawling pattern of development on the local level, and a national change in the way food is produced and transported on a national and global level has resulted in a drastic decrease in the number of farms on Cape Cod during the past three to four decades. As more people chose Cape Cod as a retirement destination or a second-home location, the price of land skyrocketed and parcels that were once farms were transformed into subdivisions. Today the high cost of land and the scarcity of parcels of any size are the most intractable impediments to farming.

Current state, regional and local policies also contribute to the loss of farming activity. The sections below identify impediments and offer recommendations to improve the future of farming.

A. State Level

Agriculture Preservation Restriction Program

The Massachusetts’ Agriculture Preservation Restriction program provides incentives to Massachusetts’ farmers by providing cash for reinvestment in farming in return for placing a permanent agricultural restriction on the property. The program is geared to farms of “state” importance and those that are situated on prime agricultural soils.

The American Farmland Trust has undertaken surveys to determine what the impediments are to greater use of the program. Partnering with the Massachusetts Farm Bureau Federation in 2009, the American Farmland Trust received 341 survey responses out of 2,000 survey instruments mailed (AFT fact sheet 2009). Respondents who said they were ineligible for the program cited five major reasons for their lack of eligibility. These were a parcel:

- With a primary use of horseback riding or boarding,
- Of less than 5 acres,
- Of more than 2/3 wooded,
- With a majority of the land in cranberry production, or
- With less than half the land on prime soils.

Of the respondents whose land was eligible, owners cited several reasons for not applying to the program including:

- Lack of knowledge,
- Fear that the program rules might change or that the restriction would limit the ability to alter the farm,
- Concern that the payment would not equal the value of the land, and
- Desire to sell at full market value in the future.

The American Farmland Trust also sought input about the APR program from local land trusts that have been active in facilitating APR projects. The 2007 survey sought information about potential projects that did not move forward in the past 5 years. Of 21-26 projects that did not result in an agriculture restriction on the farm, about one-half were not eligible because their land did not contain prime or statewide important soils.

When land trust representatives were asked why they thought some owners did not seek an APR, the representatives responded that:

- The APR program was not likely to pay what the land was worth,
- The land might increase in value,
- Owners were unable to find local match or undertake a bargain sale, and
- The application process is too long.

On Cape Cod, there is only one parcel within the APR program. It is a very large parcel but has not been farmed in about a decade. The current owner is not the person who placed the land in the APR program.

The impediments and restrictions cited by farmers in the surveys would likely be more pronounced on Cape Cod where:

- The high price of real estate, even in this economic downturn, would dissuade a farmer on Cape Cod from participating in the APR program, which has a cap of \$10,000 per acre for payment to farmers.
- Of the approximately 4,250 acres of farmland on Cape Cod, less than 14% is located on prime soils; when cranberry bogs are removed from the calculation, the total is still only 21%. Thus very few Cape Cod farms could meet the criteria for prime agricultural soils.
- About half of the farms in the General Farming Category (i.e., truck farming, animal husbandry, pasture land) are less than five acres in size.
- Many Cape Cod farms are cranberry bogs, which are not eligible for the APR program.

Recommendation:

The state should recognize the benefit of farming activity taking place in all regions of the Commonwealth. To that end, the state should reduce the number of acres necessary for participation in the APR program from 5 acres to 2 ½ to 3 acres. The amount of income that must come from farming activity should remain the same.

Chapter 61 and 61A

There are approximately 1,180 acres of farmland on Cape Cod in the Chapter 61A program. However, as with the state APR program, the minimum lot size of five acres restricts the utility of the Chapter 61 program on Cape Cod. Almost 43% of the farms on Cape Cod are less than five acres in size.

Recommendation:

Given the heightened interest in and benefits of locally-grown food, the ability to raise commercial crops on small acreages and the potential of carving out some farmland on the remaining prime soils lands on the Cape, The minimum lot size for inclusion in the state Chapter 61 and 61A programs should be reduced to of 2.5 to 3 acres.

State Zoning Act

As discussed in an earlier section of this document, the Massachusetts State Zoning act explicitly exempts agriculture from unreasonable local prohibitions of restrictions on parcels of two acres or more. However, also as noted earlier, the state does not have legislation that explicitly authorizes agricultural protection zoning, thus leading to uncertainty as to its legality.

Recommendation:

The state should recognize the critical importance of agriculture to the future of the Commonwealth by enacting legislation authorizing agriculture protection zoning, while safeguarding the financial investment of the farmer.

B. Regional Level

The 2009 update to the Cape Cod Commission’s Regional Policy Plan (RPP) identifies agriculture as an important component of Cape Cod’s ecology, history, culture and economy.

The RPP (Land Use goal 3.1) recognizes the increasing need to grow food locally in Land Use goal 3.1, which concludes by stating a goal to “support activities that achieve greater food independence for Cape Cod.”

RPP Land Use goal 3.2 states “development unrelated to agricultural operations shall be designed so as to avoid or minimize development on lands capable of sustained agricultural production as evidenced by soils, recent agricultural use, and/or surrounding agricultural use.” \

The Commission establishes thresholds that trigger regulatory review of developments that are of regional significance. The present RPP mandates Development of Regional Impact (DRI) review for clear cutting land of two acres or greater. There are no mandatory provisions for DRI review for developments proposed for existing farms or for land on prime agricultural soils.

Recommendations:

The RPP should include a goal of no loss of farmland on Cape Cod.

The Commission should establish a committee to begin work with the agricultural community to determine how the Commission can best implement the goal to “support activities that achieve greater food independence for Cape Cod.”

The Commission should change the wording in RPP Land Use goal 3.2 “development unrelated to agricultural operations shall be designed so as to avoid or minimize development on lands capable of sustained agricultural production as evidenced by soils, recent agricultural use, and/or surrounding agricultural use” by striking the words “or minimize.”

The Commission should lower thresholds that trigger regulatory review of developments that are proposed for existing farmland or prime soils. Just as the present RPP mandates Development of Regional Impact review for clear cutting land of two acres or greater, the RPP should make any development proposal to alter existing farmland or undeveloped prime soil land 2 acres or greater a mandatory DRI.

The Cape Cod Commission should ensure that any proposed development of regional impact does not affect current farming practices or the use of prime agricultural lands for any purpose other than agriculture. Land Use goal 3.2 states: “development unrelated to agricultural operations shall be designed so as to avoid or minimize development on lands capable of sustained agricultural production as evidenced by soils, recent agricultural use, and/or surrounding agricultural use.” This goal should be changed to state: “development unrelated to agricultural operations shall avoid any development on lands capable of sustained agricultural production as evidenced by soils, recent agricultural use, and/or surrounding agricultural use.”

C. Local Level

Local Comprehensive Plans and Natural Resource Plans

Many of Cape Cod’s Local Comprehensive Plans include a goal to protect and preserve agriculture for historic and cultural reasons, however there are not stated policies or plans to implement such a goal. Barnstable is the only town that has mapped areas to be considered for future agriculture redevelopment.

Recommendations:

Towns should make every effort to identify and protect parcels where farming is occurring, especially larger parcels.

Cape Cod towns’ Local Comprehensive Plans should include a goal of no net loss of active farmland and the necessary policies to implement that goal.

Towns should develop open space plans that include agricultural lands. Towns should identify and map areas for redevelopment as agricultural lands.

Low-density Zoning

With the passage in Shutesbury, Brewster, Wendell and New Salem of low-density zoning to protect resources such as forestry, water resources, open space, agriculture and community character, towns now have a better ability to protect agricultural land, and farming in general, through zoning regulations.

Recommendation:

Cape Cod towns should identify areas where agriculture could be a desired land use, especially areas that are on prime agricultural soils, and consider enacting low-density zoning in those areas. Nomination of such an area as a district of critical planning concern may be a valuable tool to provide towns the necessary time to craft a zoning bylaw to protect agriculture.

Cluster or Open Space Residential Design Development

Cluster or Open Space Residential Design Development (OSRD) bylaws are found in Cape towns, but are not used regularly in most towns. There are two amendments to this kind of zoning that would improve opportunities for agriculture. One would be to make cluster or OSRD by right and a grid design available only with a special permit. The second improvement would be to reduce the number of acres necessary to use cluster or OSRD. As noted earlier in this document, most cluster or OSRD bylaws include agriculture as a permitted use on the open space part of the parcel.

Recommendations:

Cluster or OSRD bylaws should be by right; grid design subdivisions should be by special permit only.

Towns should reduce the number of acres necessary for cluster or OSRD subdivisions.

Land Bank/Community Preservation Act/Land Trusts

As noted earlier in this document, in many areas of the state and in some places on Cape Cod, land

bank and Community Preservation Act funds have been used to protect agricultural land, either by acquisition or by placement of an agricultural restriction on the property. Many land trusts have also worked with these entities to protect agricultural land.

Some non-profit environmental organizations that hold land they wish to keep in pasture for the purpose of promoting species diversity have partnered with local farmers who place their grazing animals on the land to retain meadows or pastureland. In addition to their use as grazers, these animals also attract visitors to these sites, thereby increasing the visibility and attractiveness of farming to the community at large.

Recommendation:

The agricultural and open space communities on Cape Cod should collaborate to protect farmland through acquisition or the use of agriculture conservation restrictions.

Land trusts and farmers should consider joint ventures where grazing animals maintain pastures, thereby increasing habitat diversity while benefiting local farmers.

Municipal Lands/Tax Title Lands

In its regional policy plan, the Cape Cod Commission advises towns to evaluate municipal lands and tax title lands for their suitability as open space. As there are many uses to which towns could put such lands, towns should undertake a comprehensive study of such lands and determine their suitability for different uses. To be sure, undertaking such a project is a delicate task, as there are many competing uses for land—wildlife habitat, rare plant communities, scenic woodlands, walking trails, passive recreation, active recreation, affordable housing, other municipal needs, as well as land for community gardens or other kinds of agricultural activities.

Recommendation:

Towns and the local farming community should evaluate municipal lands and tax title lands for their suitability for agriculture.

Agricultural Commissions and Right-to-Farm Bylaws

Agricultural Commissions advocate for farmers, farm businesses and farm interests and resolve nuisance issues with farm abutters.

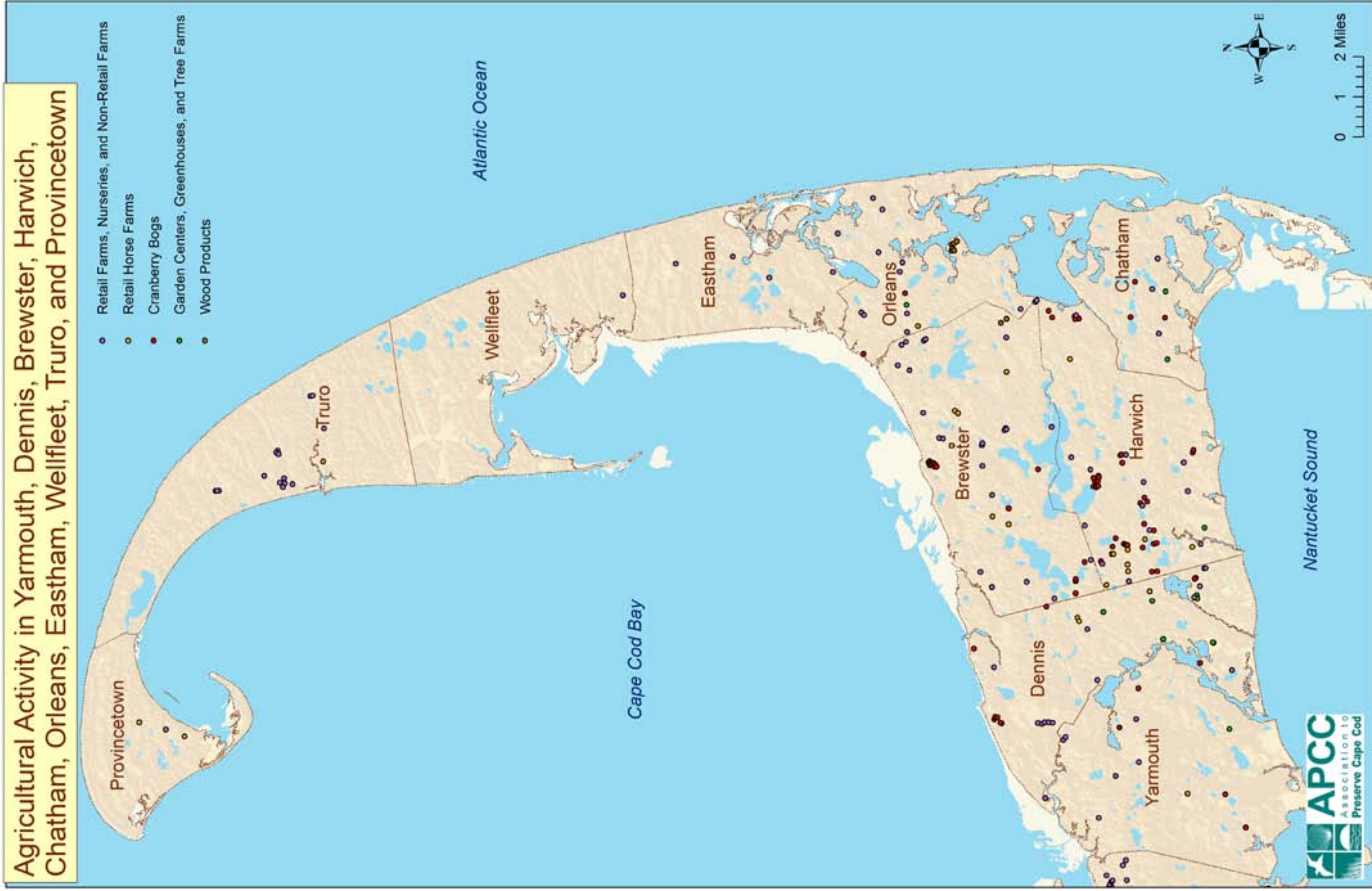
Recommendations:

All towns should start an agricultural commission to promote local farming.

Towns should enact Right-to-Farm bylaws, thereby acknowledging that farming is an accepted and desirable use of land that is of value for cultural and economic reasons.

References

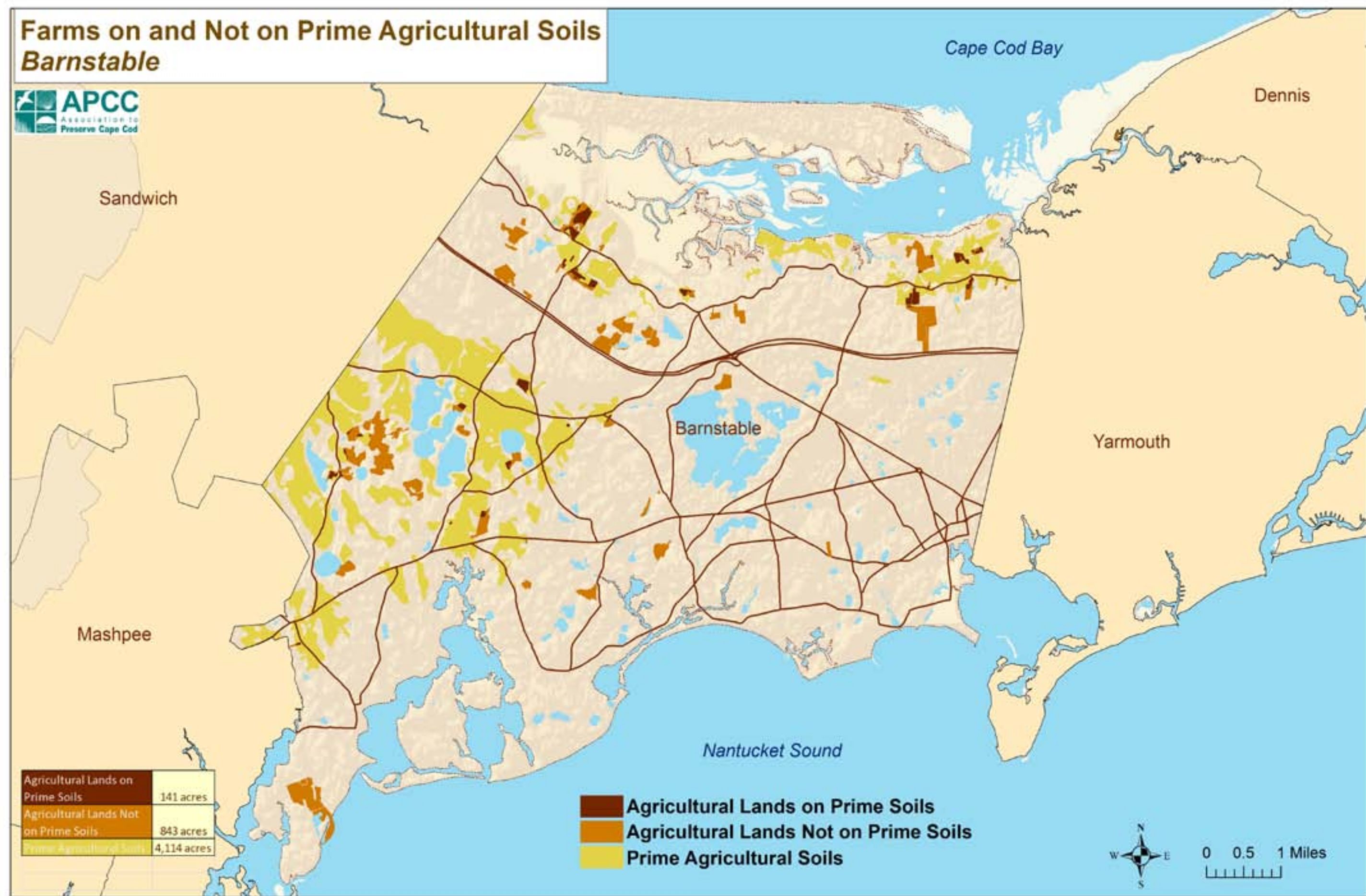
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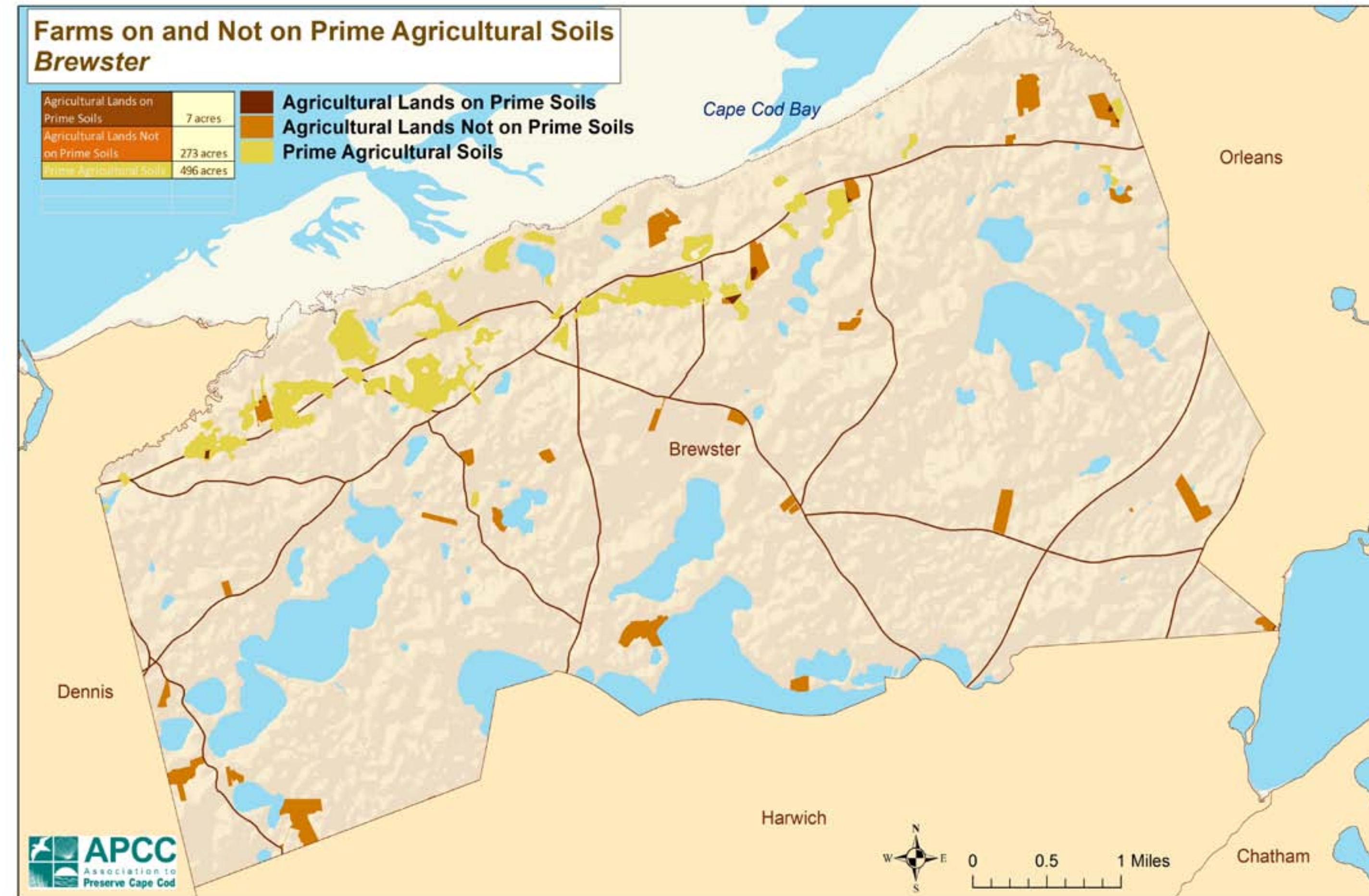
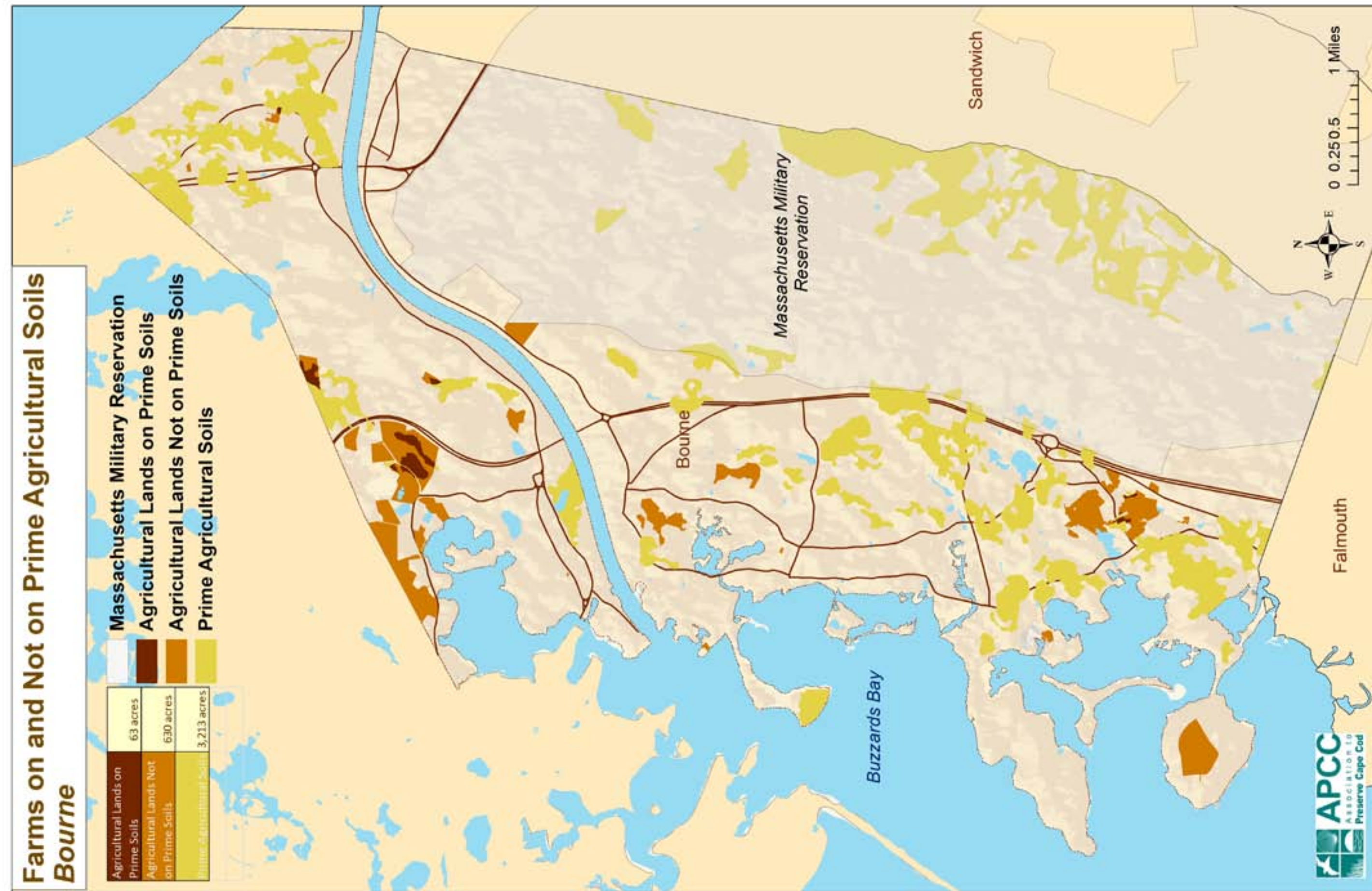


Prime Agricultural Soils Barnstable County



Farms on and Not on Prime Agricultural Soils Barnstable





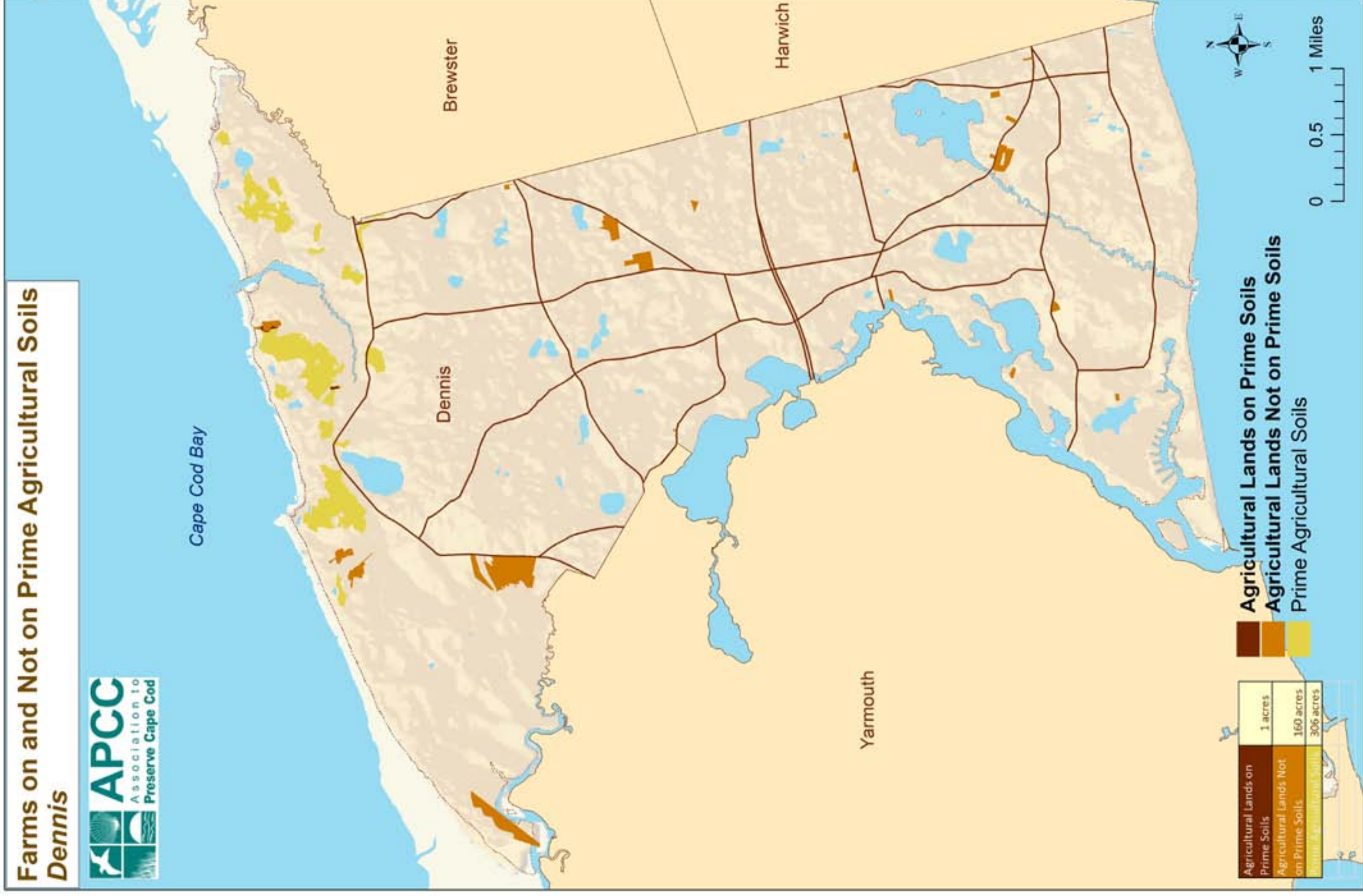
Farms on and Not on Prime Agricultural Soils Chatham

Agricultural Lands on Prime Soils	<0.1 acres
Agricultural Lands Not on Prime Soils	37 acres
Prime Agricultural Soils	523 acres



Farms on and Not on Prime Agricultural Soils Dennis

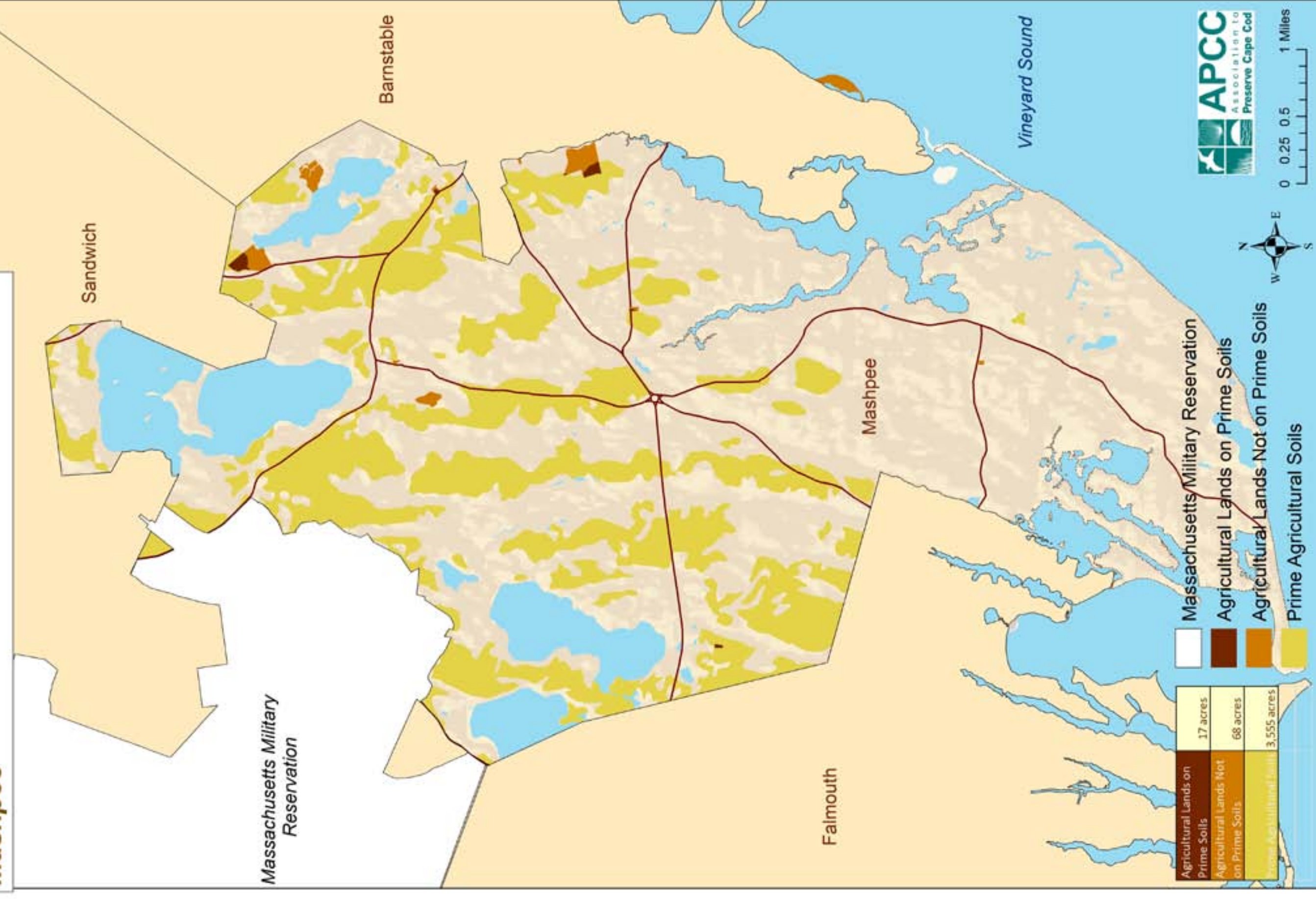
Agricultural Lands on Prime Soils	1 acres
Agricultural Lands Not on Prime Soils	160 acres
Prime Agricultural Soils	306 acres



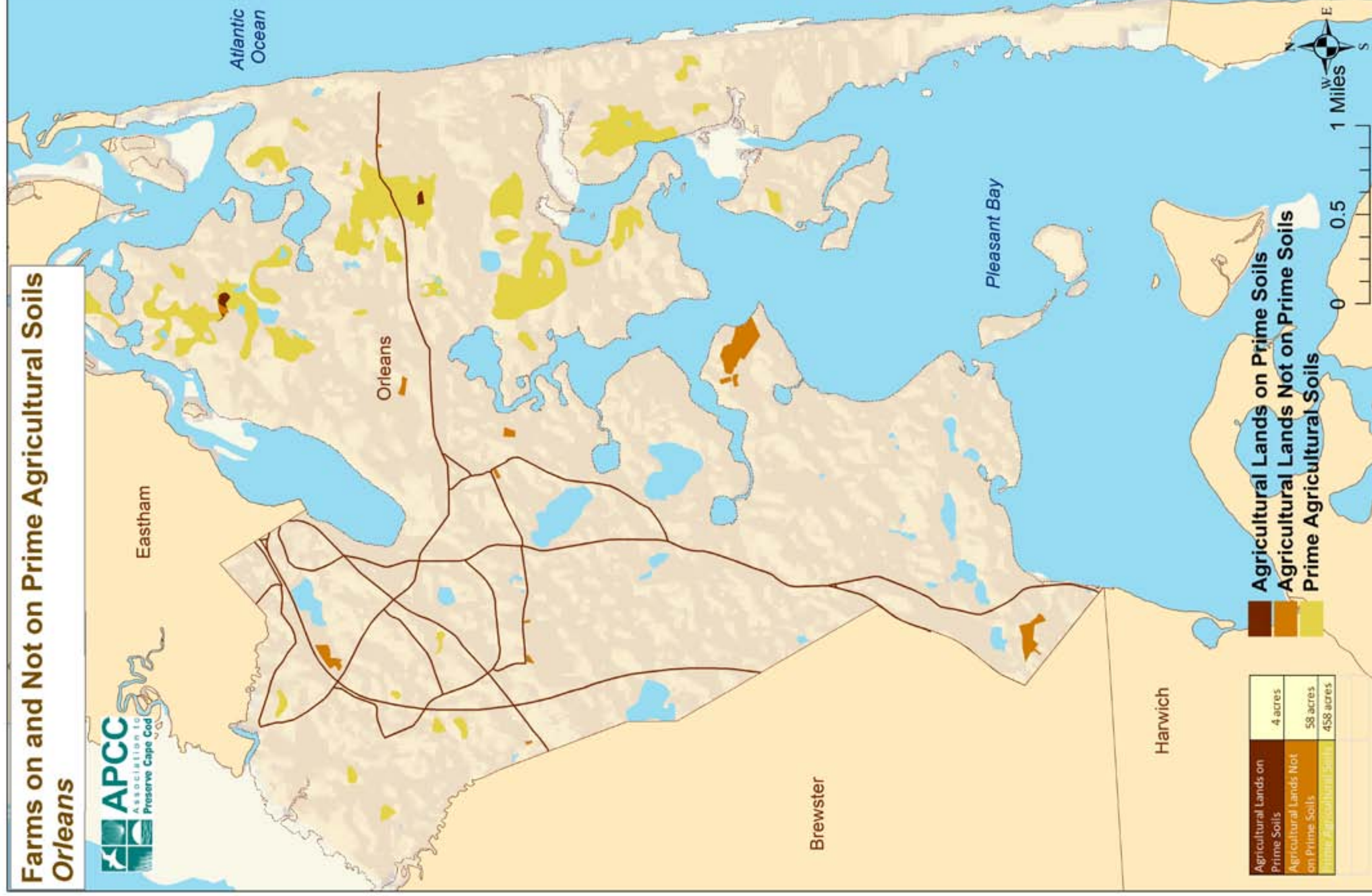
Farms on and Not on Prime Agricultural Soils Falmouth



Farms on and Not on Prime Agricultural Soils Mashpee

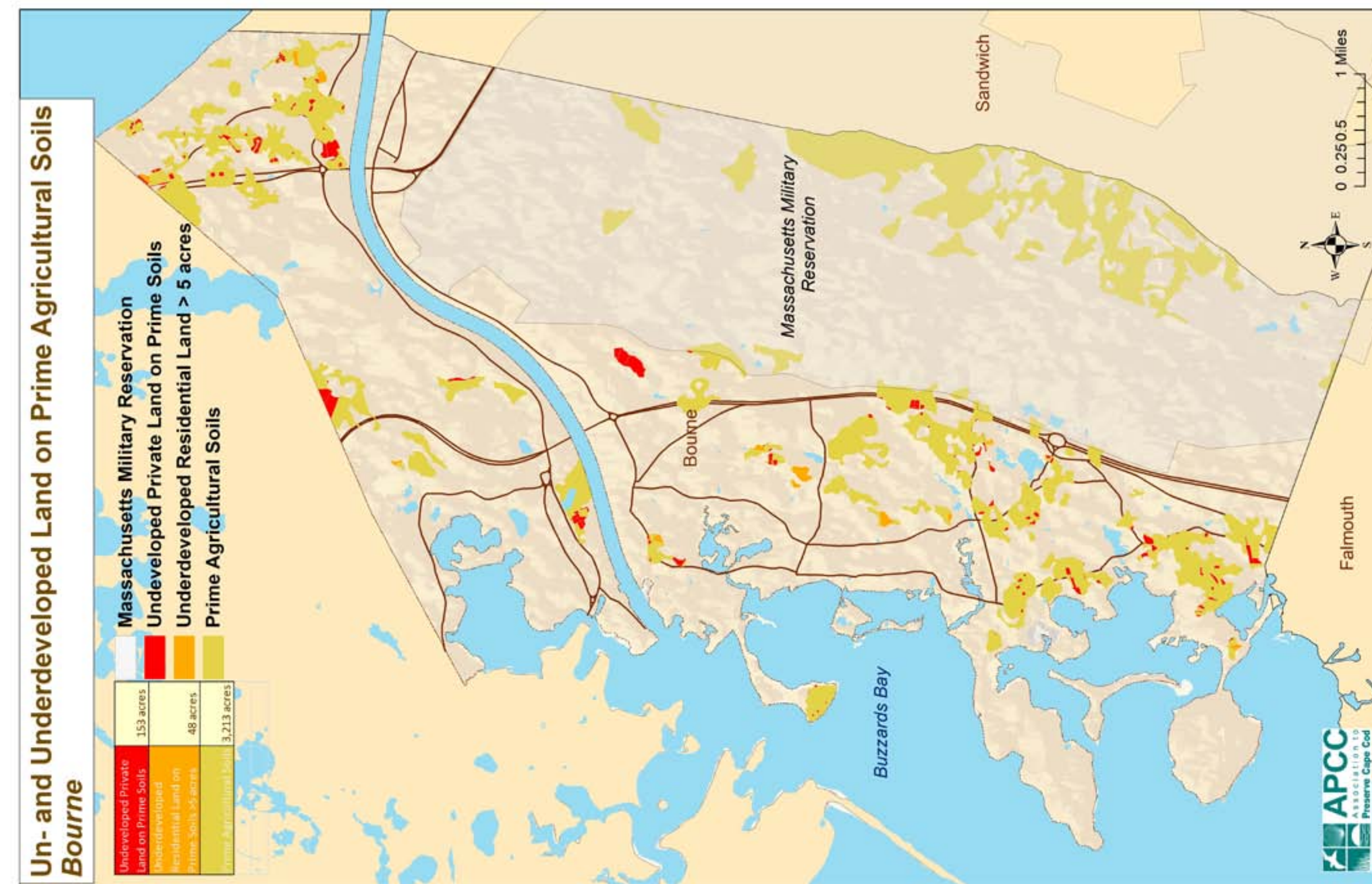
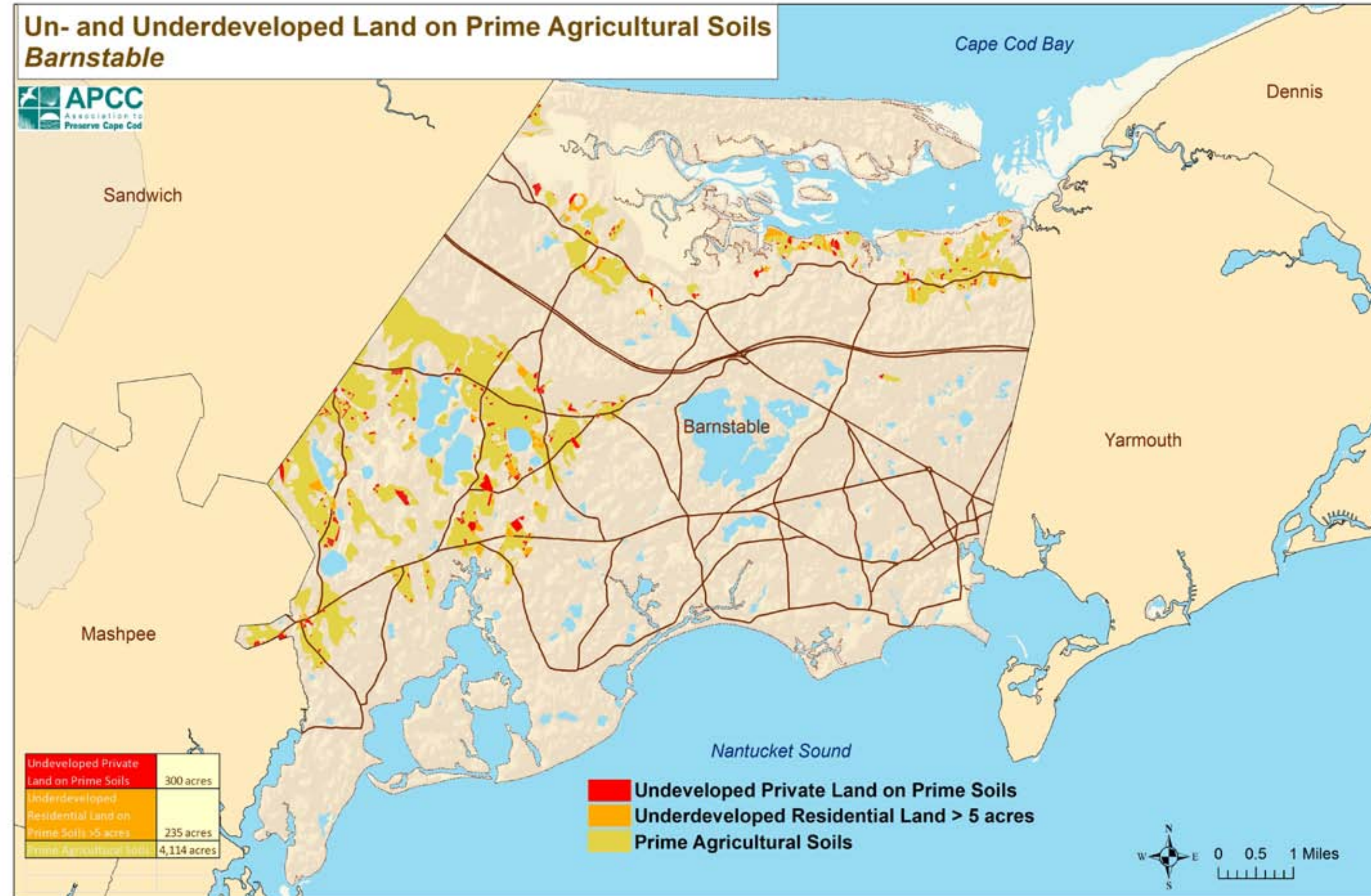


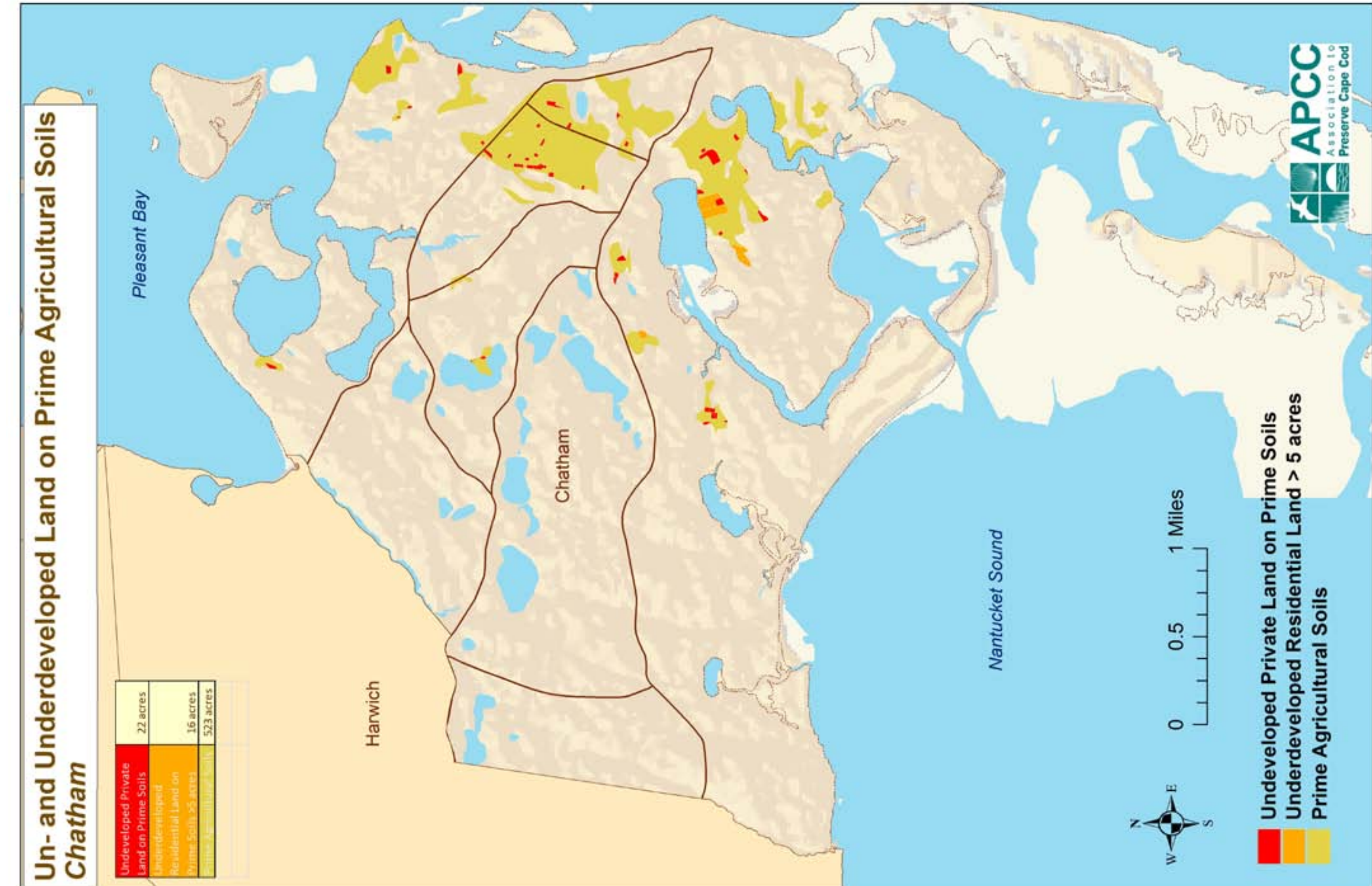
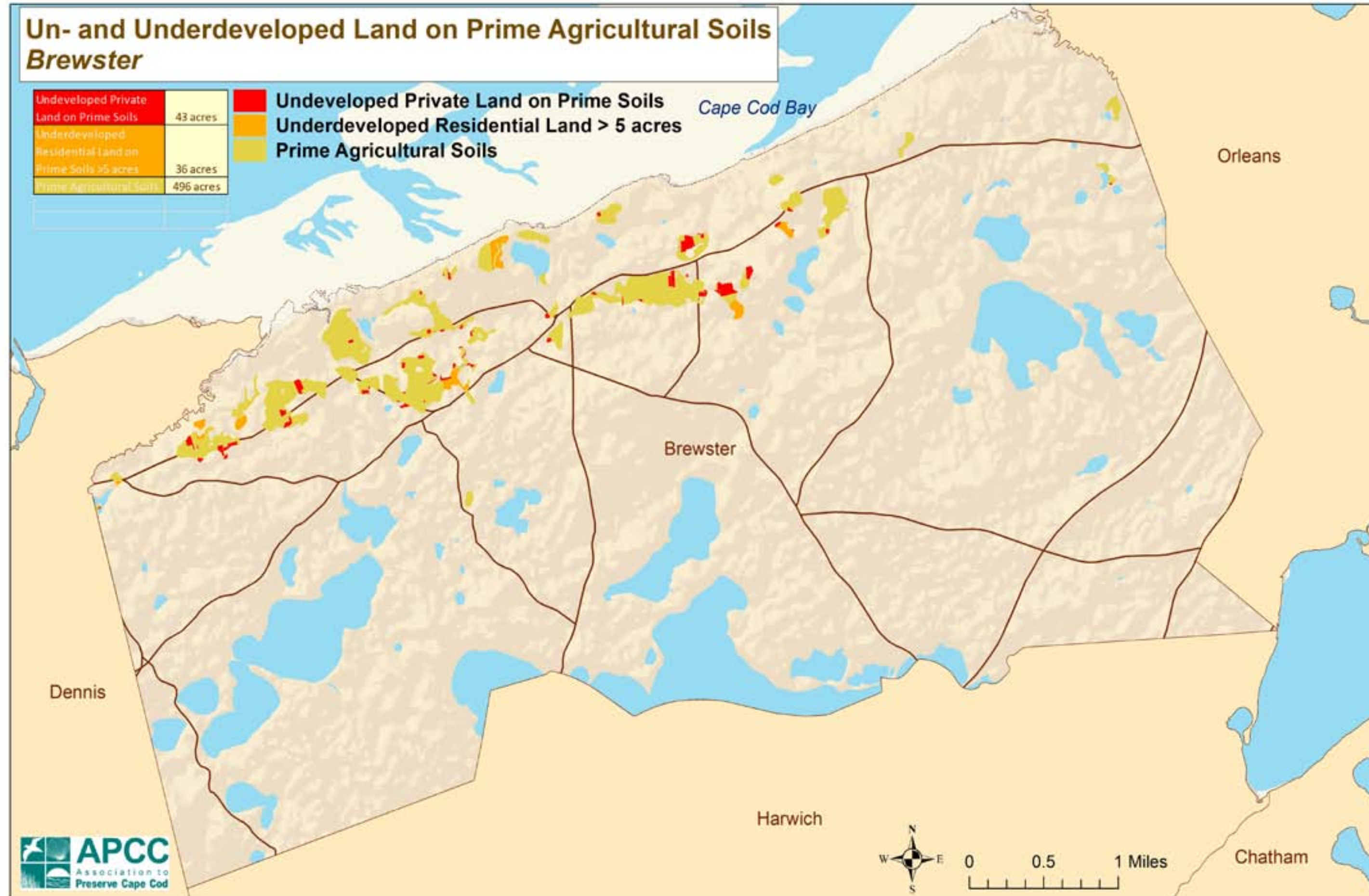
Farms on and Not on Prime Agricultural Soils Orleans



Farms on and Not on Prime Agricultural Soils Sandwich

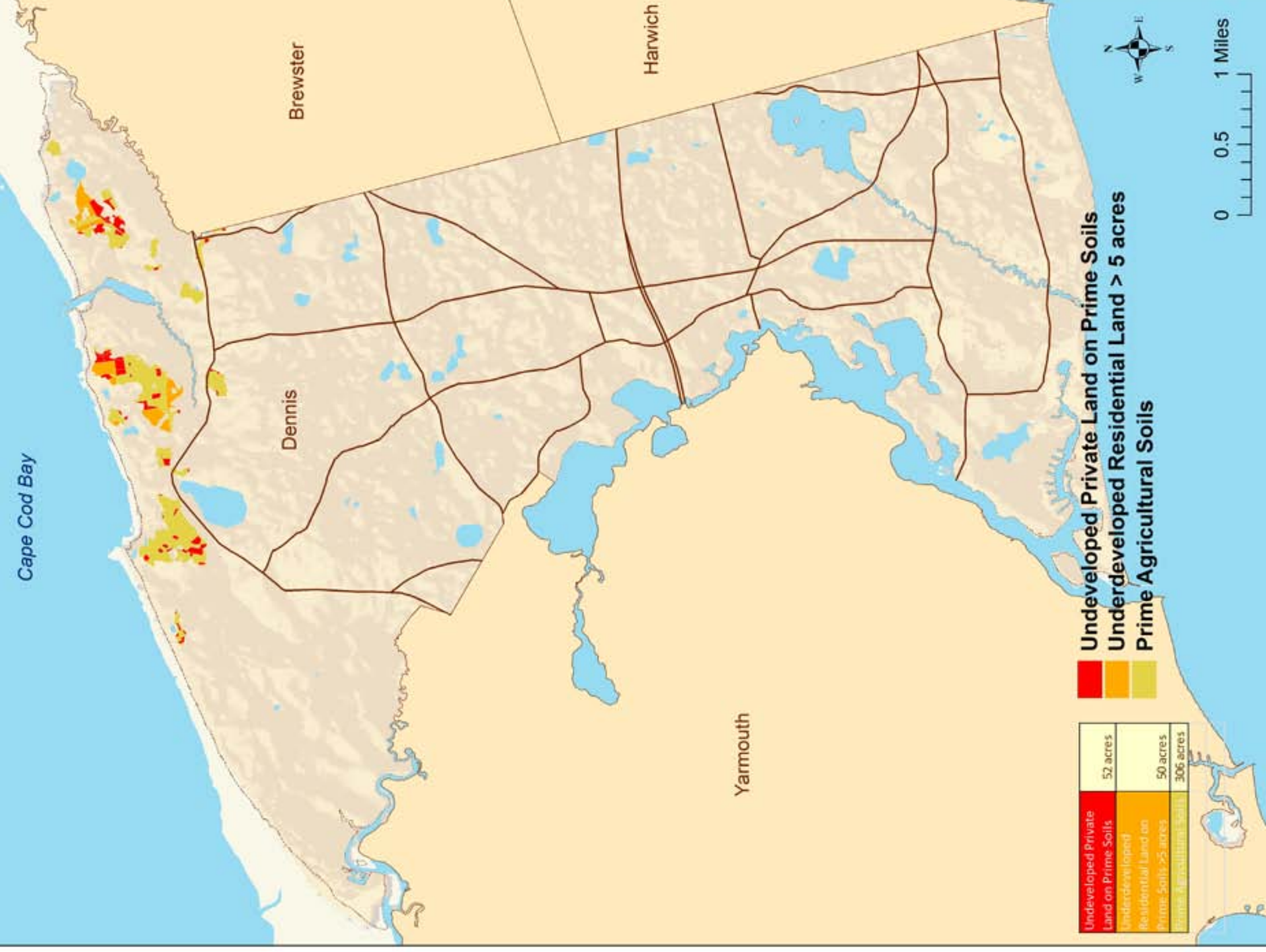






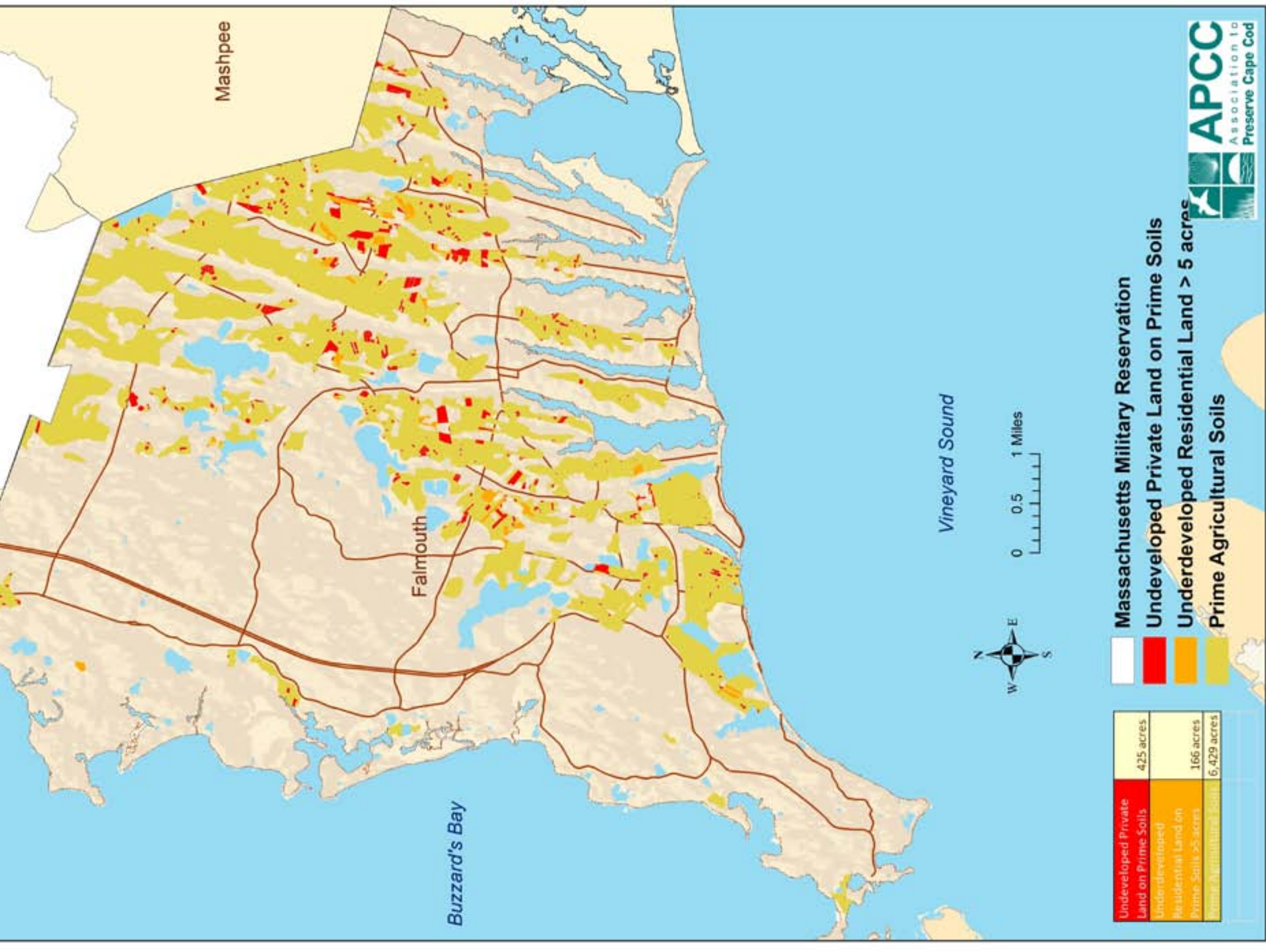
Un- and Underdeveloped Land on Prime Agricultural Soils

Dennis

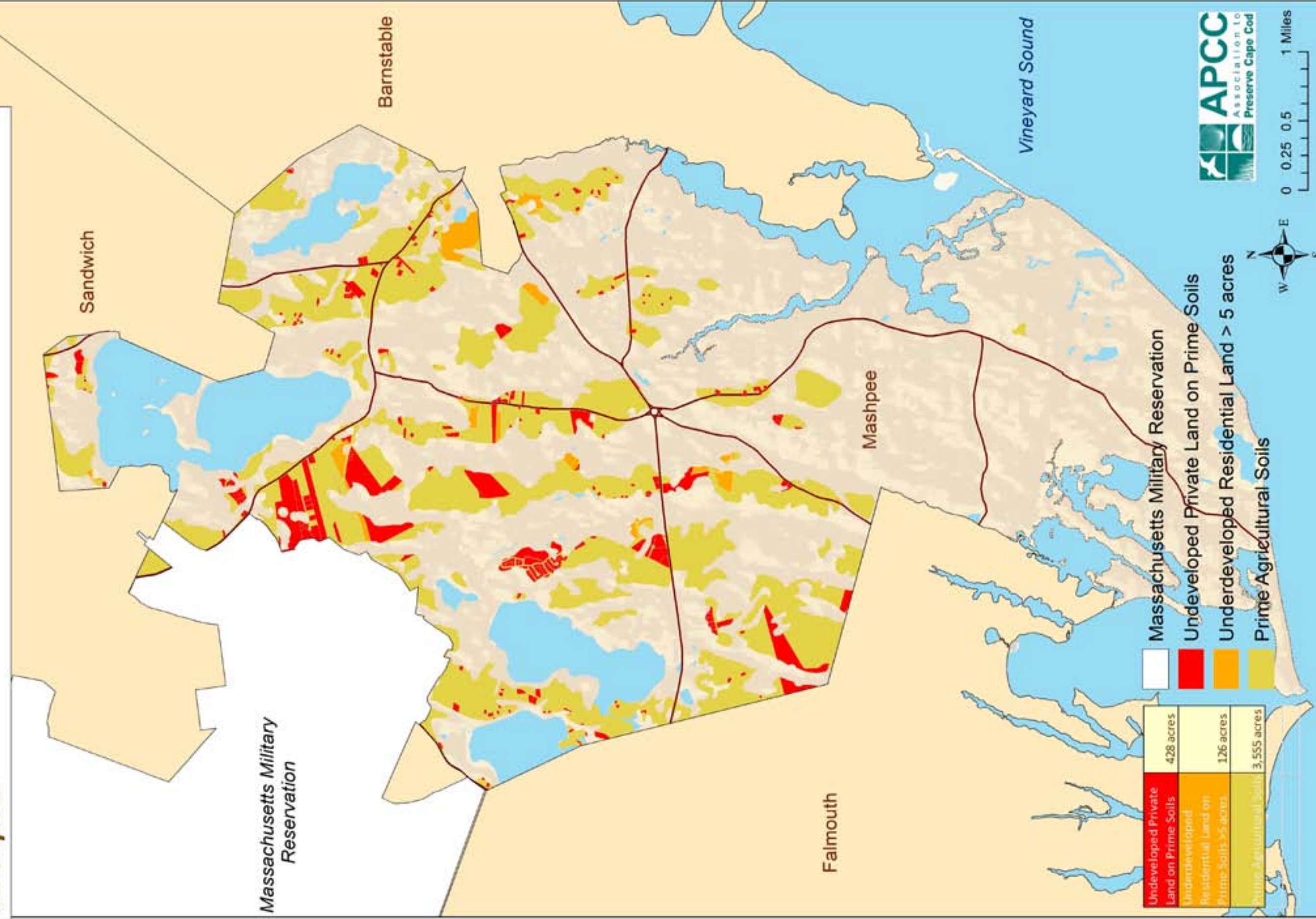


Un- and Underdeveloped Land on Prime Agricultural Soils

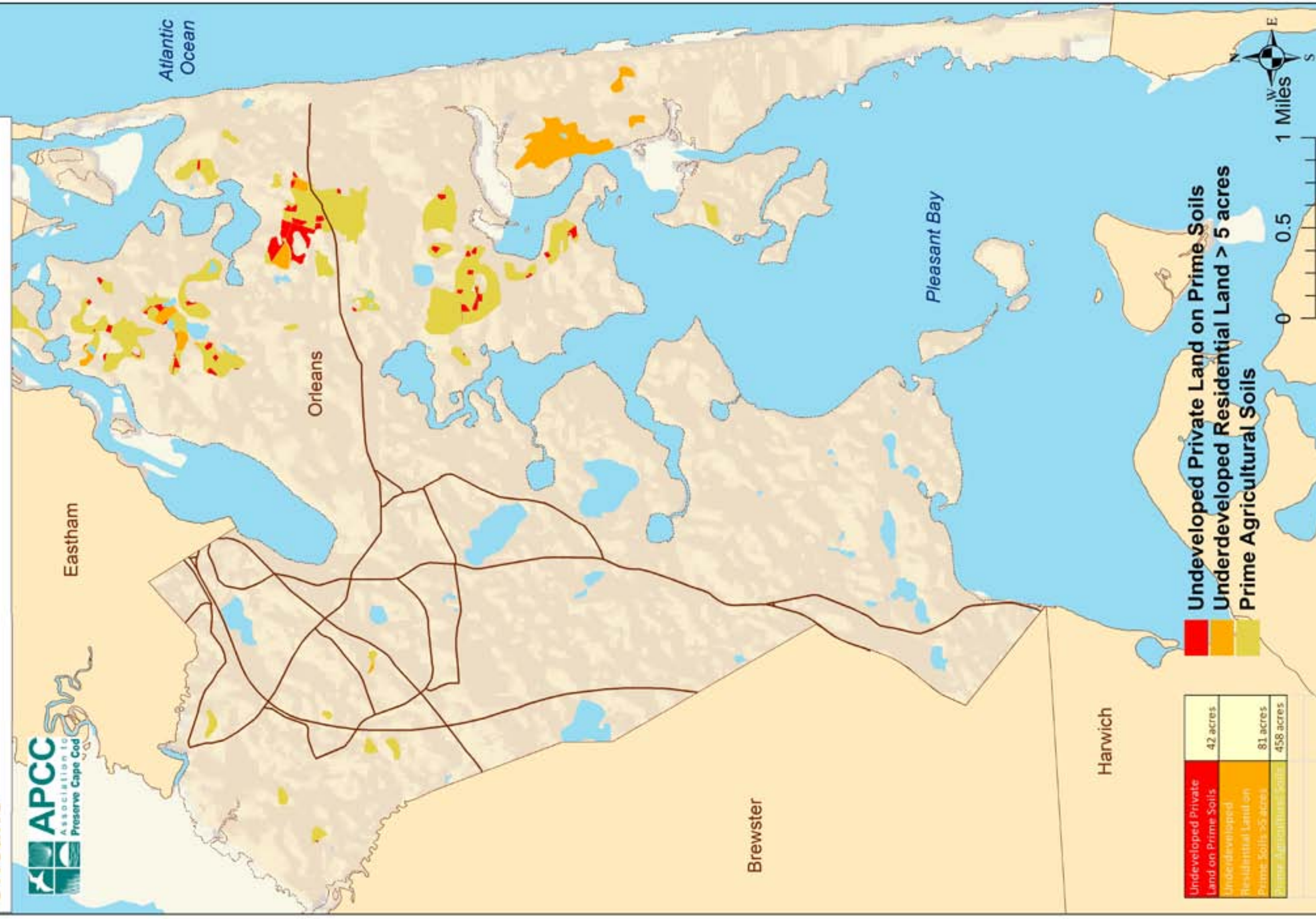
Falmouth

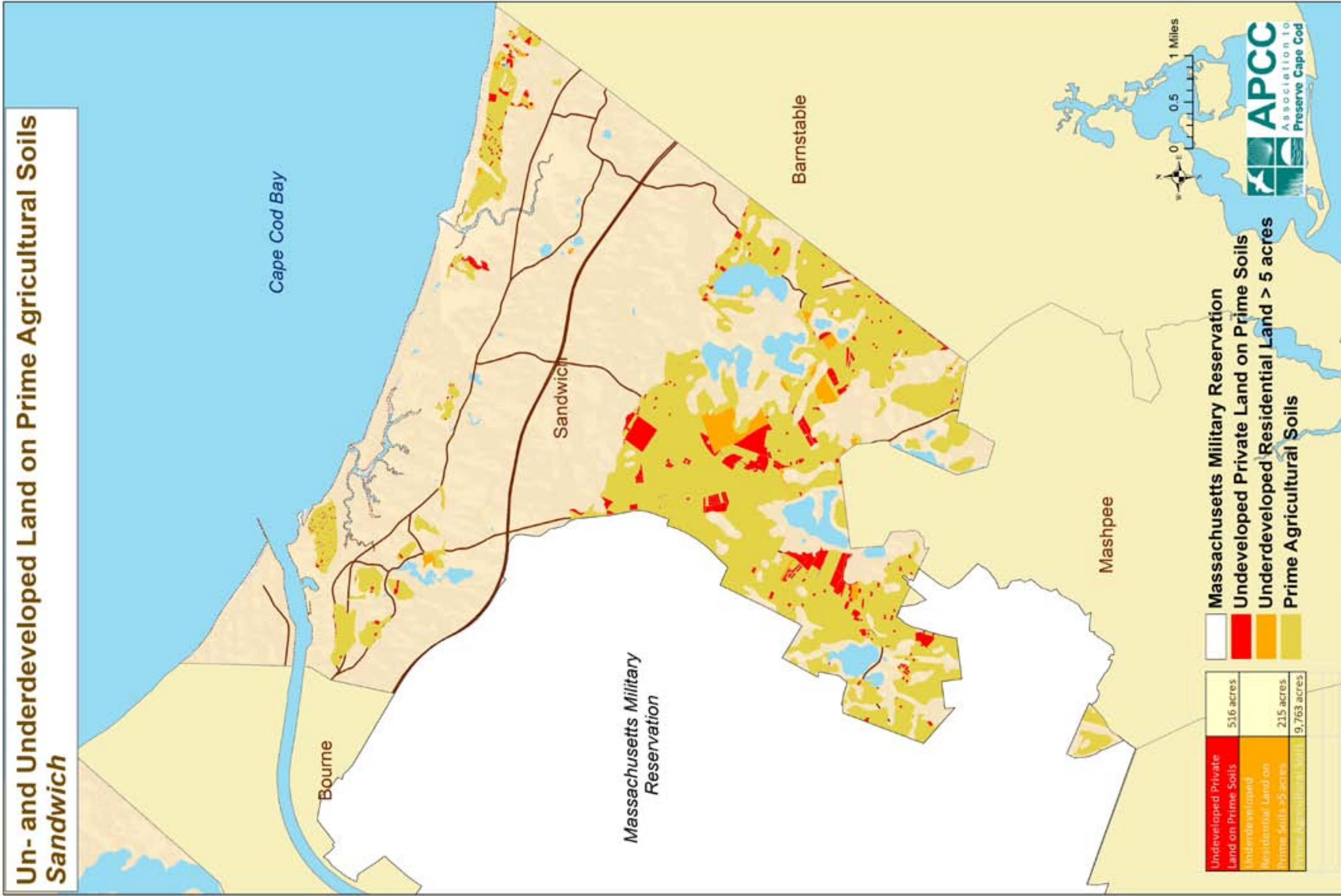


Un- and Underdeveloped Land on Prime Agricultural Soils Mashpee



Un and Underdeveloped Land on Prime Agricultural Soils Orleans





Appendix 2: Agricultural Survey

This survey has been sent to:

Please correct address information if needed.

The Association to Preserve Cape Cod (APCC) is concerned about the loss of agricultural land use on Cape Cod and is conducting an extensive analysis of the current status of agriculture. Based on our analysis to date, we have determined that your property fits the criteria of a working agricultural entity because the property either is classified Chapter 61, 61a, holds a stable license, or because you are known in retail outlets as a working farm.

In order to better understand the needs of farmers and the impediments to farming, we are sending this survey to all farms we have identified in the fifteen towns of Barnstable County. We would appreciate it if you could take the time to answer the following to the best of your ability and discretion:

1. Which of the below best describes your farm? (check one)

☐ Full time operation for at least 1 family member. Primary source of family income.

☐ Part time operation. Augments income from other jobs. Not primary source of family income.

☐ Agricultural activity on my property is for friends and family, not for income.

☐ Other:

2. What percentage of your family income is derived from your farm operation? ____%.

3. How many members of your family work on the farm? Full time ____ Part time ____

4. Please indicate your age group: (check one)

☐ Up to 24 ☐ 25-34 ☐ 35-44 ☐ 45-54 ☐ 55-64 ☐ 65-74 ☐ 75 or more

5. Please indicate your main farm product(s) and/or activities. (check all that apply)

☐ vegetables ☐ orchard fruit ☐ berries

☐ hay ☐ flowers/nursery ☐ stable rental

☐ milk/dairy ☐ forest products ☐ livestock(meat/fiber)

☐ U-pick ☐ farm stand ☐ Christmas trees

☐ riding instruction ☐ visitor activities (hayrides, corn maze, etc.)

☐ other: _____

6. What are the 3 greatest challenges your farm has faced on Cape Cod?

- _____
- _____
- _____

7. What are the 3 benefits of farming on Cape Cod?

- _____
- _____
- _____

8. Please rank the following in the order of priority in which they pose a problem or concern to you relative to the operation of your farm:
- ___ Hiring help
 - ___ Trespassing/vandalism
 - ___ Pilfering/theft
 - ___ Availability of fertilizers/pesticides
 - ___ Availability of machinery/parts
 - ___ Availability of veterinary services
 - ___ Complaints from neighbors concerning farming operations
 - ___ Regulations affecting farm operations
 - ___ Marketing your farm production
 - ___ Availability of technical assistance
 - ___ Other issues (explain)

9. Considering the knowledge and skills required to operate your farm and market your products, what are the 3 most crucial skills or the most important information you would like to acquire to improve your farming practices?

- _____
- _____
- _____

10. How many years have you been farming on Cape Cod? _____.
11. How many more years do you expect to be the principal operator of your farm? _____.
12. Do you have an individual (family member or other) lined up to take over the farm when you retire? ___yes ___no
13. Is it likely that you may need to sell part or all of your land when you retire? ___yes ___no

14. Are you familiar with these local organizations that work to sustain agriculture by providing grants, education, and services to farms? Have you received information from them or attended any of their events? (Please select yes or no)

- | | |
|---|--------------|
| Massachusetts Department of Agricultural Resources: | ___yes ___no |
| Southeastern Massachusetts Agricultural Partnership (SEMAP) | ___yes ___no |
| Natural Resources Conservation Service (NRCS) | ___yes ___no |
| Pilgrim RC&D Council | ___yes ___no |
| Cape Cod Cooperative Extension | ___yes ___no |

15. Have you been helped by any organization we have not listed above? Please identify them here and briefly describe the services you received:
16. Do you have access to the internet? ___yes ___no
17. Do you use the internet to aid in your agricultural business? ___yes ___no
18. If “yes,” in which ways do you use the internet? (*please check all that apply.*):
- ___ Email communication
 - ___ Conducting research/finding information for the farm
 - ___ Purchasing goods and services used in operating the farm
 - ___ Marketing the farm’s goods and/or services
 - ___ The farm has its own website
 - ___ Other: _____

LET’S HEAR YOUR IDEAS. Please share any ideas you may have about public events that could be held to showcase agriculture on Cape Cod:

IMPORTANT! IF YOU PROVIDE US WITH AN EMAIL ADDRESS, WE CAN SEND YOU NOTIFICATION OF EVENTS AND ISSUES AFFECTING AGRICULTURE ONCAPE COD. Please provide us with an email address so that we may keep you informed. If you do not use computers or email, perhaps a family member or friend would be willing to receive email on your behalf for this important purpose.

Contact Email address (please print clearly): _____

ANY LAST THOUGHTS? Are there any thoughts, questions, or insights you would like to share with us? We have left some space for you here...